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UW ARBORETUM
UW-MADISON
FACT SHEET

• A group of workers from the Civilian Conservation Corps a federal public works agency established during the Depression, carried out the major construction of the Arboretum. As many as 200 of the workers lived at "Camp Madison" in the central portion of the tract. Some of the buildings remain in the Arboretum's administrative area. For six years corps members planted trees and prairies, dredged ponds and completed the construction of McCaffrey Drive through the Arboretum. The workforce lasted until the CCC was absorbed by the U.S. entry into WWII in 1941.

• The University Arboretum was developed in the 1930s. One of the appealing aspects of this nature preserve and botanical study area is the duck pond along Nakoma Road. The site, of approximately 1,280 acres, includes a natural spring framed on the west side by stoneworks reportedly designed by Frank Lloyd Wright.

• Aldo Leopold became the first professor of game management at the University of Wisconsin in 1933. His position, supported by a grant from the Wisconsin Alumni Research Foundation, led to the establishment of what is now the Department of Wildlife Ecology. Leopold helped establish the University Arboretum and served as its first research director. His books, "Game Management" and "A Sand County Almanac," remain basic texts for the practical and aesthetic consideration of preserving the natural environment. Leopold's concept of the "land ethic" continues to serve as the golden rule of natural resource management and preservation.

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Arboretum

FOR IMMEDIATE RELEASE 6/11/98

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FRAUTSCHI POINT RESTORATION UNDERWAY

MADISON - Frautschi Point, one of the most important of the University of Wisconsin-Madison campus natural areas, will begin the return to its former glory this week under a new plan for its restoration and study, university officials announced today.

The UW-Madison Arboretum is spearheading the effort to restore the land on Frautschi Point to a savanna landscape, the ecosystem that greeted European settlers in the 1830s. The project calls for the systematic removal of weedy tree species such as box elder and green ash that are threatening the biodiversity of the site.

"Over the past century, the beauty and ecological health of this remarkable piece of land has been compromised," said Arboretum Director Gregory D. Armstrong. "By clearing portions of the thicket of early successional trees, we can save a magnificent old oak on the site, open a vista to Lake Mendota and begin the long-term restoration process. Implementing the restoration in pieces over time, as we are, will permit students and researchers to learn from, evaluate and fine-tune the restoration as it progresses." The work on Frautschi Point will begin this week and continue through the fall, Armstrong said.

The Arboretum has considerable experience in restoring land to savanna, an ecosystem of open-grown trees, especially bur oaks, in a grassland setting. The Wingra Oak Savanna Project along Monroe Street in Madison is a noteworthy example of a site that is beginning to resemble its original state. It is also a testament to the ongoing teamwork between the Arboretum. researchers and local volunteers from the Dudgeon-Monroe Neighborhood Association. The Frautschi Point savanna has involved similar contributions of interested volunteers and University classes, and will continue to do so, said Armstrong.

The university received the land for Frautschi Point along Lake Mendota Drive near the Eagle Heights apartments in 1990 as a family gift in honor of Walter Frautschi. Thanks to an additional gift from Mrs. Walter Frautschi, the Arboretum is able to move ahead with the restoration of the land.

The Frautschi Point restoration project is part of the biological management plan for improving the ecological health of the campus natural areas, all managed by the Arboretum, Armstrong said.
###

and enter a drawing for one of two new mountain bikes.

"We're committed to making this a safe community and I can't think of any better use of our funds than to prevent injuries," said Mark Felsheim, co-chair of the Eagle Heights Assembly. Felsheim says donations to buy more helmets will be gratefully accepted.

For more information or to sign up, contact Conley at 265-5717 or e-mail

Wisconsin Week
April 29, 1998

Wisconsin Week

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Research

Law professor crafts revision to state's probate code

A UW-Madison law professor helped draft a sweeping revision to the state laws that dictate the transfer of wealth and property through wills and estates.

The update of Wisconsin's probate code, based on extensive work by Howard Erlanger, Voss-Bascom Professor of Law, was signed into law April 27 by Gov. Tommy Thompson.

Erlanger has worked on the revision since 1992, when the State Bar of Wisconsin's real property, probate and trust law section began examining the statute. The 103-page piece of legislation is considered non-partisan and was sponsored by Democrats and Republicans in the Assembly and Senate.

"This is first and foremost a piece of consumer legislation," says Erlanger, who specializes in wills and estate planning at the Law School and also has an appointment in the department of sociology.

The probate code addresses situations such as the signing of wills and gaps in estate planning, such as the transfer of property after a divorce or death of an intended beneficiary. Among other changes, the code's revisions will allow witnesses to sign wills separately; currently, all witnesses must be present at the same time in the same room at the will signing.

Another major change nullifies all transfers of property to former spouses at a person's death. The existing statute says that transfers to former spouses of wealth or property outside of wills — such as life insurance policies, jointly held property and retirement plans — are not automatically nullified. ■

New federal toxicology center awarded to UW-Madison

A new national Center in Developmental and Molecular Toxicology has been awarded to UW-Madison for the next four years.

Funded by the National Institute of Environmental Health Sciences — and one of a network of 26 in the country — the center will focus on the basic processes through which environmental agents cause disruption to animal development. The award is for roughly $3 million over four years.

The center will research how environmental chemicals affect the human body. Colin Jefcoate, a pharmacology professor, will lead the new center. Richard Peterson, a professor of pharmacy, will serve as associate director. ■

Community

Rezoning boosts effort to preserve Greene Prairie

A vote last week by the Fitchburg City Council to rezone 87 acres of land adjacent to the Arboretum's Greene Prairie effectively buys time to negotiate an alternative to a planned housing development.

Land for the controversial 95-house development, proposed by Indianapolis businessman Hal Harlan, was previously rezoned by the council to allow for the development. But negative public reaction to the development, which some feel threatens the prairie's ecological health, prompted the council to reconsider. By rezoning the land for rural use only on a 6-2 vote, Fitchburg has provided a coalition of groups, including the university, Dane County, the Dane County Natural Heritage Foundation and others, more time to raise money and negotiate a purchase of at least part of the property.

"I consider it (the vote) a critical turning point," says Arboretum Committee chair Don Waller. "We still have a long way to go, but it indicates the amount of public support for maintaining the land as open space."

Money to buy the land would come from state, county and private sources. A fall referendum to ask Fitchburg residents to help purchase the property has also been proposed.

Developed primarily in the 1940s and 1950s by the late UW-Madison botanist Henry Greene, Greene Prairie is considered one of the world's best examples of a restored prairie. In recent years, land development in Fitchburg and Madison has caused flooding and allowed the spread of exotic grasses. ■

WAA honors Hanson for higher-ed advocacy

The Wisconsin Alumni Association has named State Rep. Doris Hanson (D-Monona) recipient of its new Advocate of the Year Award.

The award is given to a graduate or friend of UW–Madison who has shown exemplary leadership with regard to higher education legislation. Hanson will be recognized in an awards presentation May 8, along with the university's 1998 Distinguished Alumni and Distinguished Teaching Award winners.

Hanson, who was elected in 1992, will resign next month to become head of TEACH Wisconsin, the state agency administering more than $100 million to link schools and libraries to the Internet.

A member of the Assembly Committee on Colleges and Universities since taking office, she served as its vice-chairperson during the 1993–95 legislative session. Greater management flexibility, investment in technology, and market-based pay plans for faculty and staff were all issues at the forefront during Hanson's time in office.

"Representative Hanson is an invaluable ally of the university," says Chancellor David Ward. "Her leadership in the assembly will be missed."

The reception to honor Hanson and other award recipients will begin at 5 p.m. in the lobby of the Memorial Union Theater, with presentations in the theater at 5:45 p.m. and an alumni dinner at 7 p.m. in Great Hall. For information about attending, call Sue Miller at 262-9647. ■

Arboretum

April. 6, 1998

TO: Talk/public affairs show hosts and producers
FROM: Liz Beyler, (608) 263-1986
RE: UW-Madison experts - April interview ideas

Live long and prosper: Aging Institute explores science of 'optimal aging'

Spanish explorer Ponce de Lesn never found the mythical Fountain of Youth. But modern-day explorers in UW-Madison's Institute on Aging have tapped a well of secrets to better health and happiness for older Americans.

The Aging Institute, celebrating its 25th year on campus, brings together more than 100 UW-Madison researchers across 45 departments with the singular pursuit of promoting "optimal aging." Medical research teams concentrate on new treatments for Alzheimer's, osteoporosis and other age-related diseases, while social scientists look for strategies to promote mental health, economic independence and better social services.

Carol Ryff, interim director of the institute, says the focus on aging could not be more relevant today. Early in the next century, an estimated 20 percent of the country will be age 65 or older, as the baby boom reaches retirement age. And with health and medical advances, Americans can expect to live almost a quarter of their lives in retirement.

Ryff can provide an overview of the institute's most innovative research, which will be featured in an April 24 symposium on campus. Topics include the effects of diet and nutrition on aging, studies of aging across the life course, and a look at resilience in older Americans.

For more information, contact Ryff at (608) 262-1818; or e-mail her at ryff@ssc.wisc.edu.
- Brian Mattmiller, (608) 262-9772

Lessons of the Holocaust occupy April

Every April, the world remembers the Holocaust of World War II. What lessons have we learned? Robert Skloot, UW-Madison professor of theatre and drama and Jewish studies, has written two books on how the Holocaust has been portrayed on stage. In addition to his inquiry into how theater expresses the Holocaust through the experience of survivors and their families and friends, Skloot recently has turned his attention to the role of forgiveness in helping those who have suffered heal and move on. Reach him at (608) 262-5246/263-2329.
- Barbara Wolff, (608) 262-8292

Greene Prairie and the Technology of Restoring Lost Landscapes

The UW-Madison Arboretum is a collection of restored native landscapes -- forests, prairies, wetlands -- that do or did exist in Wisconsin. The Arboretum's Greene Prairie, a small tract threatened by the possibility of development nearby, is one of the best examples of a restored prairie anywhere in the world. But what makes Greene Prairie truly remarkable? It is special, according to Arboretum ecologist Mark Leach, because of the circumstances of its development.

Greene Prairie, explains Leach, was developed principally by one person, botanist Henry Greene who had an unparalleled knowledge of Wisconsin plant microhabitats and who kept meticulous, detailed records. For the most part, Greene worked alone, and his habit of mapping every grouping of new plants and writing detailed annual reports, provides a blueprint for successful ecological restoration. It is that technology that makes Greene Prairie, once just a tired cornfield, one of Wisconsin's most important pieces of real estate.

For more information, contact Mark Leach (608) 263-7344
- Terry Devitt, (608) 262-8282

The question of leisure

Where does all the time go? For some Americans, leisure is just another word for work, scheduled to the hilt. For others, leisure is what work leaves on the plate, and the leavings look meager. For yet others, leisure is eaten up not by work, but by the incessant demands of errands.

A man with many thoughts about leisure and its meaning in the lives of modern Americans is Robert Ray, a professor of forest ecology and management who teaches recreation administration and psychology. He can talk about some questions you can ask about your own life of leisure to puzzle out whether it's what you want it to be. You may reach him at (608) 265-2229 or roray@facstaff.wisc.edu.
- Jeff Iseminger, (608) 262-8287

Parenthood in America

A conference taking place April 19-21 at Monona Terrace Convention Center will unite parents, community leaders, and specialists in family support and advocacy, child care, pediatric health, education, law, and policy making from across the country.

Among the more than 50 presenters who will be in Madison for the "Parenthood In America" conference are: Jean Oyemade Bailey, professor of Human Development at Howard University; Urie Bronfenbrenner, professor of Human Development and Family Studies, and James Garbarino, co-director of the Family Life Development Center, at Cornell University; and Bernice Wiessbourd, president of Family Focus Inc. of Chicago.

The conference is sponsored by seven schools and colleges of UW-Madison and by the National Institute of Child Health and Human Development and several other national and state organizations. To find out more about it, call Ann Whitaker of the Department of Professional Development and Applied Studies, (608) 262-4509 or (800) 442-4617.
- Alex Hancock, (608) 262-2102

Student Satisfaction Remains High

UW-Madison is one of the few major universities that regularly surveys its undergraduates to find out what they think about their campus experience. The fifth annual survey of student satisfaction at UW-Madison recently released its figures, and it shows again that the overwhelming majority of undergraduates

(88 percent this year) are satisfied or extremely satisfied with their overall university experience. The survey also revealed that 93 percent of students rank UW-Madison as good, very good or excellent in terms of cost vs. quality.

The survey was conducted by James Sweet, professor of sociology and director of the University of Wisconsin Survey Center, who can discuss other findings from this year's survey and that of previous years. He can be reached at (608) 262-2182 or sweet@ssc.wisc.edu.
- Jeff Iseminger, (608) 262-8287

The tube at 50: Where it's been, where it's going

From Uncle Miltie to RuPaul, it's been a long strange 50 years for television. James Baughman, professor of journalism and mass communications, has studied extensively the history and evolution of our favorite cultural phenomenon, and is happy to speculate on where TV is headed as we approach the millennium. Reach him at (608) 263-3390/(608) 263-4898.

Meanwhile, Barry Orton, professor of professional development and applied studies, has spent his career charting government regulation of the broadcast industry, and can discuss past, present and possible future trends in that area. Reach him at (608) 262-2394/(608) 262-3888.
- Barbara Wolff, (608) 262-8292

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How Greene is this prairie?

While the future of this restored prairie is under debate, one thing is certain: This is Henry Greene's masterpiece

Terry Devitt

If there's anything people know about Henry Greene, it's that he knew how to build a prairie. From knowing the make-up of the soil, to the correct placement and grouping of plants, Greene was an artful and methodical recreator of a lost landscape.

His master work, the prairie in the UW Arboretum that bears his name, was every inch his own. Apart from Greene himself and a few trusted friends, no one was permitted to plant, experiment or manipulate the small plot of land that some people now consider the world's best example of a restored prairie. Those exclusive terms were a written precondition, initialed in 1944 by Aldo Leopold, G. William Longenecker and A.F. Gallistel, when Greene made his proposal for the "establishment and study of a low prairie."

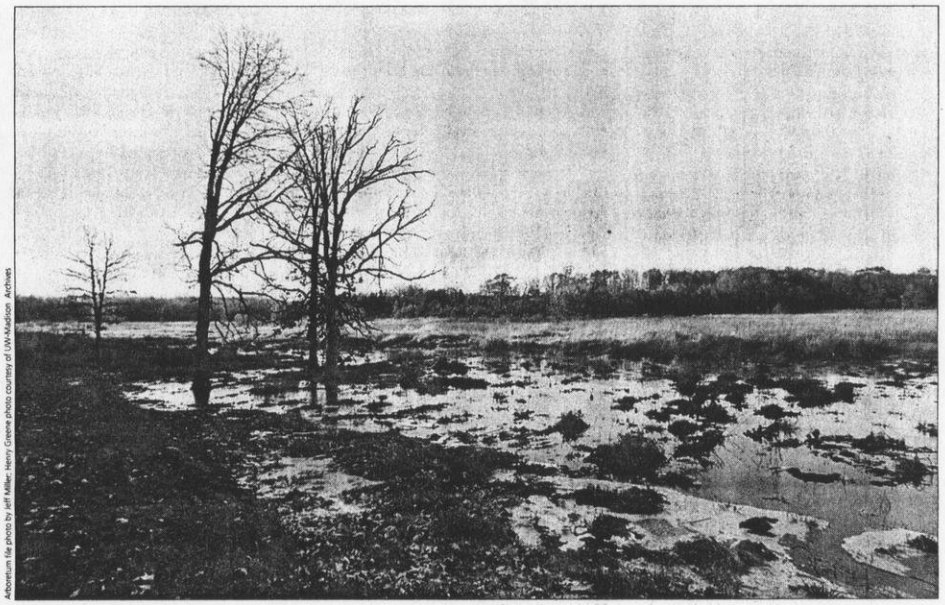
Greene's terms were a reflection of his personality — solitary, eccentric, comfortable only in his knowledge of plants. But even more important, the peculiar exclusivity of Greene's contract with the technical overseers of the Arboretum is the reason Greene Prairie was an ecological success.

Today, Greene Prairie is at the heart of a controversy over a proposed development on adjacent land. The development, say those familiar with the prairie, may add to a problem that has slowly been consuming it. During the last decade, as more and more land in the Madison and Fitchburg has been given over to development, the capacity of Dunn's Marsh, the natural reservoir for runoff in the Dunn's Marsh water shed, has been exceeded. After each heavy rain, the marsh, which has no outlet, overflows and water gushes over the old Chicago & Northwestern Railroad tracks, flooding the low-lying end of Greene Prairie. These floods carry the seeds of reed canary grass, a tough exotic capable of overwhelming any plant Henry Greene ever imported to his experimental prairie.


Henry Greene

The Arboretum's managers have used fire and herbicides in a years-long effort to defeat the invading grass, but Arboretum ecologist Mark Leach admits that unless the hydrology problem can be solved, the reed canary grass will continue to overrun the prairie. "Until we can get control of the flow of water over the railroad bed, there's nothing we can do about the reed canary grass," he says.

Set in a shallow depression and bordered by sandy hills deposited by the last glacier when its margin stood west of Lake Wingra, the Greene Prairie is a microcosm of what Dane County may have once been like. Framed by oak woods, the prairie opens to a seemingly expansive vista of a glacial landscape. It is there, across the railroad tracks in Fitchburg, where Harlan, Sprague, Dawley, purveyor of laboratory animals, has proposed building 95 houses. It is the potential loss of that vista, and the sense of primal isolation the prairie affords, that is a primary concern of those who oppose the development.

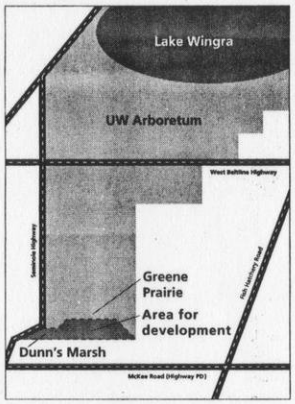

Arboretum file photo by Jeff Miller. Henry Greene photo courtesy of UW-Madison Archives

Tom Givnish, botany professor and prairie expert, says there is civic merit in the idea of "preserving both the vista and ecological communities of a spectacular wet prairie. (It is) a fact that five or 50 years from now no one is going to want to take their ... grandson or granddaughter to see how beautiful the Harlan, Sprague Dawley development is."

Born into a wealthy Indiana family, Henry Campbell Greene first came to the Wisconsin as a graduate student. He trained as a mycologist and received his doctorate here in 1933. Although a member of the botany department, he did not teach. But he was considered an outstanding authority on the parasitic fungi of plants. He was also the right-hand man for John Curtis and played an essential role in Curtis' signal contribution to the field of ecology, "The Vegetation of Wisconsin," the authoritative description of the state's plant communities.

It was probably with Curtis, on frequent excursions in the 1930s to the state's prairie relics, when Greene first became enamored with the prairie. In 1940, that familiarity became a compelling interest, according to Thomas Blewett, whose 1981 thesis describes the development of Greene Prairie. In 1942, Greene first surveyed the site of his prairie, when it was "but a few years removed from a long succession of ill-advised, sporadic and spotty attempts at cultivation."

Greene himself meticulously recorded his efforts, from the first geological surveys and soil maps, to a complete catalog of the plants that existed on the land before he undertook his restoration. His records, which included annual reports and scores of grid maps indicating where and when groups of plants were planted, are unique. That documentation, coupled with what some consider an unparalleled knowledge of the necessary microhabitat and plant groupings, that makes Greene Prairie special among restorations.



Intermittent flooding of the Greene Prairie, in addition to the occasional fish, brings other unwanted life to what some experts consider the best example of a restored prairie anywhere. Flooding after heavy rains has introduced the exotic reed canary grass, a plant capable of overwhelming the prairie ecosystem. Proposed development south of the prairie (see map at left) may bring more foreign species into the prairie.

Greene Prairie is less a scientific wonder than a technological marvel, says Leach. The prairie is as precise a reconstruction of a lost landscape as exists anywhere, and the blueprints reside in Henry Greene's detailed records, neatly typed on onion-skin paper, in the basement archive of the Arboretum's McKay Center.

"It wasn't clear that he was doing it to advance a theory," says Leach. "It was testing his skill at building something. It was new. No one had tried to do something like that before, and he pulled it off very well."

Over 15 years, Greene planted more than 12,000 seedlings and plants, and an unknown number of seeds, representing at least 133 species of plants. "He knew all the plants and where they belonged," says Leach's predecessor, ecologist Virginia Kline. "He knew what plants went together."

Greene spent a lot of time thinking about the prairie's moisture and soil gradients. By doing so, he optimized the success of many species, including the rare prairie orchids that thrive there and which are sometimes stolen by garden enthusiasts.

Writes Blewett in his thesis: "True to his original word he carefully planted the entire prairie without the elements of haphazardness and unskilled labor that were part of the Curtis Prairie development."

Leach imagines that Greene compared his solitary work with that of the Arboretum's more famous Curtis Prairie, a place alive with a small army of men employed by the Civilian Conservation Corps. Restoration techniques there were less rigid, and the planting record far less precise than Greene's.

But, over time, Greene's reports became less frequent and he spent less time with his once all-consuming project.

He didn't live to see the restored prairie assume his name. In 1967, not long before the dedication ceremony, Greene, a timid driver who sometimes pulled off the road to let oncoming cars pass, made what must have been a torturous drive to Arizona, where he committed suicide. ■

How Well Can We Do?

Henry Greene's Remarkable Prairie

A classic project illustrates the strengths--and the limitations--of the craft.

by Virginia M. Kline

The 20-ha Henry Greene Prairie at the University of Wisconsin-Madison Arboretum is one of the most successful prairie restorations anywhere, a fine example of "the best we can do so far." It is successful in terms of the usual objective criteria for prairie restorations: dominance by characteristic grasses, diversity of prairie forbs and grasses, little woody invasion, and few troublesome exotics. For many of the visitors following the trails, however, its success is measured in esthetic terms--the beauty of the prairie vistas, the colorful flowers in a background of grass, the remote location with its near-relief from highway noise. The songs of sedge wrens mingle with those of yellowthroats and goldfinches along the brushy edges, and an occasional redtailed hawk calls from above. To complete the sensory impact, mountain mint yields its pungent aroma in response to passing feet, and on a warm day late in summer the air is filled with the tantalizing fragrance of prairie dropseed.

The success of this restoration is undoubtedly due in large part to the skill of Dr. Henry Greene, who selected and surveyed the site, and (at his own insistence) planted it almost single-handedly. He did most of the planting between 1945 and 1953, using seeds, seedlings and wild transplants. Greene was a botanist whose

professional specialty was mycology, but he was an expert on prairies. Not only was he an excellent prairie taxonomist, but he knew the soil and moisture requirements for each species, and what combinations of species grew together naturally. Because of this he was able to do an unusually good job of placing each species where it would do well on the fledgling prairie. He took his time, kept the transplants watered until established, and meticulously recorded the location of each planting to facilitate later evaluation of its success.

Greene also recognized that the site he selected had soils that would be advantageous for prairie restoration. They were varied enough to sustain a variety of species, but there was little of the deep silt loam that favors weeds over prairie species in many locations. There was a substantial area of dry sandy soil and some wet sandy soil as well, both of which can favor particularly interesting prairie species, while making exotics less competitive. The field had most recently been a cornfield rather than a pasture, and this was probably an advantage too, since the weeds characteristic of such fields are generally less tenacious than those of pastures.

So, how good is the best we have achieved? How close does Greene Prairie come to being an authentic replica of historic prairie? What scientific observations support the positive esthetic evaluation? Diversity of native prairie species is a useful criterion, and Greene Prairie has over 200 native prairie species in its 20 hectares. This compares favorably with the 150

species at Faville Prairie, a fairly high quality remnant prairie having similar size and soils 40 km to the east. The most diverse prairie type in Wisconsin (wet-mesic, a type well-represented at both Faville and Greene) had an average of only 62 species per prairie in the 31 remnants studied by Curtis and his students forty years ago (Curtis, 1959). The small size of the remnants, as well as their isolation, probably contributed to the relatively low diversity. Chiwaukee Prairie, a larger (100-ha) prairie in the southeast corner of Wisconsin has 350 native prairie species.

Dominance by native prairie grasses, a second criterion of quality, is an obvious feature of Greene Prairie. Most prominent are big bluestem, little bluestem and Indian grass, all of which have increased steadily over the years, as shown by a series of five surveys starting in 1952 (Blewett, 1981). Most spectacular has been the increase in importance of prairie dropseed, which jumped from a frequency of 1.5 per cent in 1971 to 10.3 per cent in 1976 (the last official survey) and has now become the main dominant in large sections of the prairie.

Most of Greene Prairie meets the third criterion of quality, limited invasion by woody species, but trembling aspen is encroaching along the north boundary where soils are sandy and the prairie is bordered by oak woods. The aspen resprout vigorously after prescribed burns. Whether the amount of encroachment is more than that characteristic of the original prairie is unknown, but because the prairie is limited in size, even a few acres seems undesirable, and we attempt to discourage spread of the aspen by burning and cutting.

Greene Prairie has had relatively few exotic weed problems, so it meets the fourth criterion very well. Since 1951, disturbance species have generally declined, and some of the weedy exotics have disappeared altogether (Blewett, 1981). Two species are still of some concern: leafy spurge (Euphorbia esula) and reed canary grass (Phalaris arundinacea). A small patch of leafy spurge was discovered in the prairie more than a decade ago; since then repeated spot applications of herbicide have reduced the size of the patch and the number of stems, but have not eradicated it. Reed canary grass has invaded a low area of the prairie that has been flooded repeatedly by silt-laden storm water from housing development on adjacent property.

Thus, in general, the prairie receives high marks in terms of the plants that are present, but of course a prairie is more than an assemblage of plants. Assessing animal populations is much more difficult, for few species are easily seen and counted, and there have been few comprehensive studies of natural prairies for comparison. We do know that some of the easily visible animals that once were found in prairies are not present--bison, elk, Franklin's ground squirrel, upland sandpiper, and green snake, for example--but there are few data available on smaller organisms, either for natural or restored prairies. Of particular concern is the limited information on arthropods and soil organisms, which are known to play important roles in the ecology of prairies.

Other questions relate to the functioning and dynamics of the prairie. Are the ecological processes occurring in Greene Prairie

comparable to those in a natural prairie? In particular, what can we say about soil formation and succession?

Incorporation of organic matter from the roots of the grasses and forbs into the soil creates the deep A1 horizon that is characteristic of prairie soils. Nielsen and Hole (1963), in a study of soils in the Arboretum's restored Curtis Prairie, found that the soil had lost 26 percent of its organic matter in 90 years of agriculture and, after 19 years under planted prairie, had regained about 60 percent of what was lost. Blewett's (1981) data for soil organic matter and depth of the A1 horizon suggest that development of the A1 is proceeding at least as fast in Greene Prairie as it is in Curtis. One factor that may speed soil development in Greene is the large number of prairie ant mounds that have appeared. Ants have been shown to be important in the development of the A1 horizon (Baxter and Hole, 1967).

In discussing succession, Curtis (1959) described the presettlement prairies as a mosaic of "micro-gap-phases", with numerous small disturbances in the form of abandoned mammal burrows or ant mounds constantly appearing and providing temporary habitat suitable for early successional plant species, these in turn being replaced by later successional species. In today's prairies, including Greene, the early invaders of small disturbances are likely to be exotics such as sweet clover and wild parsnip, which tend to exclude the native pioneers and sometimes later-successional species as well. This changes the dynamics of the community and affects its composition and species distribution.

In Greene Prairie there have been bursts of populations of some

species, including those of prairie gayfeather, yellow stargrass, smooth phlox, lupine and Indian paintbrush, as well as the prairie dropseed mentioned earlier. Are these related to the newness of the prairie, or did similar bursts occur in the presettlement prairies as well? A limiting factor in answering such questions is the scarcity of natural prairies to serve as models. In addition, the few remaining prairies may not be representative of the original prairie landscape. Most remnants are so small that even species presence comparisons may be misleading, and comparisons of dynamic processes are problematic indeed.

Even the best restorations, such as Greene Prairie, are just beginnings--good beginnings that have successfully brought together many of the important players and established them in appropriate settings. Clearly, we still have much to learn as we work to create authentic replicas of historic prairie ecosystems.

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Arboretum

UW faculty examine growing impact of the Internet

By Brian Mattmiller

The Internet, a once-obscure computer network designed as a national security concept two decades ago, has hit mainstream America with such force that its membership routinely doubles each year.

Some faculty at UW-Madison say the estimated 20 million current users of Internet may be using only a fraction of the network's potential. They predict its expansion will bring about huge new commercial ventures, build a new, alternative sense of community among users, and could potentially help struggling rural areas.

Lawrence Landweber, a computer science professor who was on the ground floor of the Internet's growth, says he never imagined its use would have spread so far, so fast. In 1979, Landweber received a National Science Foundation grant to develop CSNet, a national network open to computer scientists. It was the first open academic network in the nation and a model for future NSF-funded academic networks.

Today, Landweber estimates there are about 32,000 connected networks on the Internet. Landweber is vice president of the Internet Society, a worldwide organization that explores technology and policy issues surrounding the Internet.

"I spent countless hours in the 1970s and late 1980s trying to explain why e-mail would be of any value," Landweber says. "I still remember everybody viewing this as real science fiction."

And people may be saying the same thing again about what Landweber envisions around the corner. As telecommunications move to fiber optics, dramatically increasing the capacity to send information, people may soon be dabbling in "virtual worlds" in their living rooms.

That concept may apply to multi-site conferences, where people could be connected through a three-dimensional "telepresence" of other callers. And there may be shopping networks that allow the consumer to "try on" clothing through a 3-D image with all the consumer's right measurements. And surgeons may be able to practice difficult surgical techniques through anatomically accurate imaging of the patient.

The new technology will also allow so many things to be done from the home — shopping, working, studying and banking — that it could push physical structures like libraries and banks into obsolescence, he says. It might also bring the advent of "electronic money."

"Basically one extreme of the future is where we all retreat to our homes and never go anywhere," Landweber says. "I think there's a good possibility that people will tend to withdraw more."

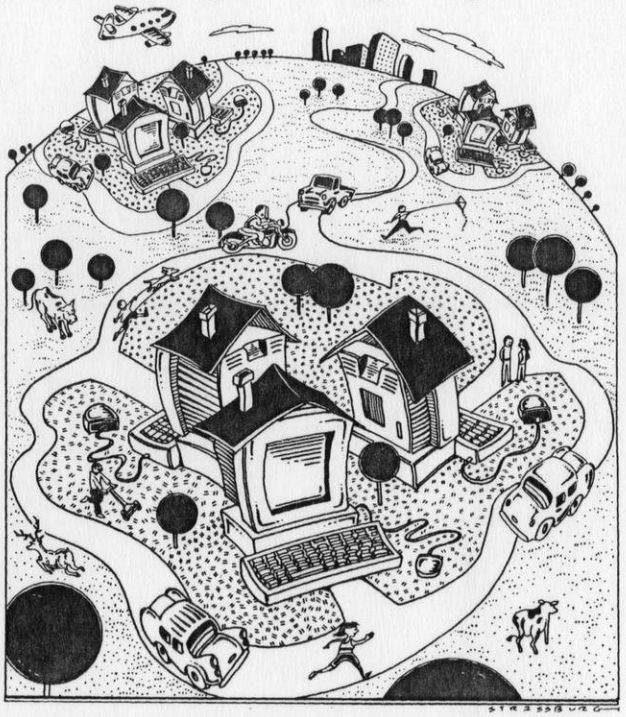
But the future advances of the Internet will depend in great part on commercialization of the system, something that many original users dread but Landweber welcomes. He says it will never advance without commercial investment.

Many people were outraged with an Arizona attorney's recent attempt to advertise his services over the Internet. The attorney was blasted with a form of cyberpunishment known as "flaming," where a person's e-mail box is deluged with angry messages. But Landweber says the practice of flooding computers with thousands of free messages is something commercialization would curb.

"The visceral reaction comes from the fact that this has only very recently moved outside the realm of the academics and the scientists, into what you might call the real world. And now it's opened up and everybody's there."

Barrett Caldwell, an assistant professor in industrial engineering, says that given the unique culture developing over the Internet, the outrage over commercial intrusion is understandable. "The Internet was set up as a way of doing work and having friends, and the two are very closely linked," he says. "The advertising case was sort of like walking into a teacher's lounge or a break room and having a salesman standing there handing out leaflets."

Caldwell studies e-mail and other electronic technology in terms of how it influences group dynamics and interpersonal skills. With the Internet, Caldwell sees the advent of "electronic communities" as helping people connect socially in ways never before possible.



With an estimated 32,000 connected networks, the Internet is expanding its range from the academic world to the average citizen. Connecting mainstream America is something that could help some small towns become more economically viable.

Although plodding through a virtual world may seem like an isolating activity, Caldwell says it has just the opposite effect for people who find a community of like interests.

"Isolation is basically not getting enough of the kind of contact you want, or the variety of contact you want," he says. "But with a computer, a satellite dish and a fax modem, you can feel in contact with all the people you need to talk to, even though you don't see them."

The number of special interest lists found on the Internet is almost limitless. Hobbyists can find lists on fly fishing, remote control toys, woodworking, and Corvettes among the thousands of possibilities. Music fans can find discussion groups on general styles like classical, the blues and jazz, or specific bands like the Trash Can Sinatras. No academic interest is too specialized: Internet surfers can come across discussion groups focusing on brine shrimp, bacteria or small ruminants.

And many Internet users have developed ways to overcome the impersonal nature of conversation by computer. Many people personalize a "post" on an e-mail forum by describing what they're wearing, reading, listening to, or some other personal description. Others use what cyberculture calls "emoticons," little computer glyphs that resemble smiling or frowning faces, or other symbols that indicate an emotional state.

But Caldwell says problems will arise whenever people try to replace one form of communication with another, or rely too much on one limited approach. Caldwell says that traditional office banter around copy machines and water coolers tends to have a creative and productive payoff, and might be lost with an over-reliance on e-mail.

"The idea of using electronic communication for social contact makes sense if there's no other way to get to those people," he says. "But writing an electronic letter does not get across all the things you want to get across to people."

Another development just beginning to take shape is the electronic frontier's spread to rural America. WiscNet, Wisconsin's Internet service provider, recently awarded NSF grants to three rural Wisconsin regions to provide local-dial access to the network. It represents a further attempt to expand the Internet's range from the academic world to the average citizen. And it's something that could help some small towns become more economically viable, according to rural sociology professor William Freudenburg.

Traditionally, many small towns have developed resource-driven economies in agriculture, mining and logging, and all of those industries have seen dramatic declines, Freudenburg says. Rural America hasn't been the beneficiary of past gains in technology, he says, and there's no guarantee it will share in the fruits of the Internet. But he considers himself a skeptic who sees some very hopeful signs.

Expanding information technology to these smaller towns could help further a trend of urban flight to rural areas — not just to live, but to conduct business. Freudenburg says many professionals, such as consultants, architects, accountants, engineers and writers, are setting up shop in smaller towns.

"Many of these businesses can start any place where you have a Federal Express dropoff and access to the information superhighway," he says. "It can move the urban refugees further and further out into the sticks."

Urbanization taking a toll on famous Greene Prairie

By Terry Devitt

One of the world's oldest and most renowned restored prairies is succumbing to the effects of urban development.

The Arboretum's Greene Prairie, unique among restored prairies in its variety and composition of native plants, has shrunk significantly as the result of siltation and the pernicious invasion of an exotic grass.

About one-fifth of the 50-acre prairie, planted almost single-handedly by the late UW-Madison botanist Henry Greene, has been lost, crowded out by reed canary grass, a non-native plant that thrives in the silt sediment laid down by the flooding of Nine Springs Creek, says Virginia Kline, Arboretum ecologist.

The problem, according to Kline, stems from rapid urban development of the surrounding area, including the Dunn's Marsh watershed, a 1,100-acre tract in the cities of Madison and Fitchburg that lies directly upstream from the Arboretum and the prairie lovingly planted by a scientist committed to doing the work himself.

New roads and driveways, hard-packed lawns and a stream bed choked with sediment have caused extensive and prolonged flooding of portions of the prairie and paved the way for the invasion of the prairie by plants that soon crowd out native prairie plants.

"As the pace of urban development has picked up around the Dunn's Marsh watershed, runoff has increased dramatically," says Arboretum Director Gregory D. Armstrong. "That has led to an increase in flooding in the Greene Prairie, which brings in sediment and the seeds of problem plants like reed canary grass, a plant so competitive that it obliterates almost everything else."

The transformation of a degraded cornfield — into what is generally considered to be one of the most successful prairie restorations anywhere — began in 1945 when Greene selected and surveyed the site of the future prairie.

A curator in the UW-Madison Herbarium, Greene's professional specialty was mycology, the study of fungi. But he was also an expert on prairies. He was especially knowledgeable about the soil and moisture conditions that different prairie plants required, and what combinations of plants grew together naturally.

"It's a very special prairie," says Kline. "It is unique in its variety, from dry sandy soils to wet areas, conditions that sustain a great variety of species."

Today, the prairie has more than 200 native prairie species including five species of orchid, one of which, the prairie white fringed orchid, is listed by the federal government as endangered.

"If we don't solve our drainage problem, that population could be wiped out," Kline says.

Arboretum field crews have attempted to beat back the invaders with fire and herbicides, but Kline says the problem won't be solved until a way is found to alleviate the flooding of the prairie, a condition that favors reed canary grass.

Some hope, she says, can be found in an ongoing planning effort between Madison, Fitchburg, Dane County, the Department of Natural Resources and the University. Strategies to mitigate the repeated storm water surges that inundate the Greene Prairie should be reflected in a soon-to-be-completed study of the Dunn's Marsh watershed.

Kline noted that the watershed is almost completely developed now. The impossibility of further large-scale development there, coupled with the ideas being developed by local units of government to reduce storm water surge, may help alleviate the flooding of the Greene Prairie.

But those strategies may take years to implement. "We'll just have to wait and see if upstream improvements help," says Kline. "Once the flooding is taken care of, we intend to do all we can to eliminate the reed canary grass and restore what we've lost."

Arboretum

The Leopold legacy

Zedler cultivates UW's rich tradition in restoration ecology

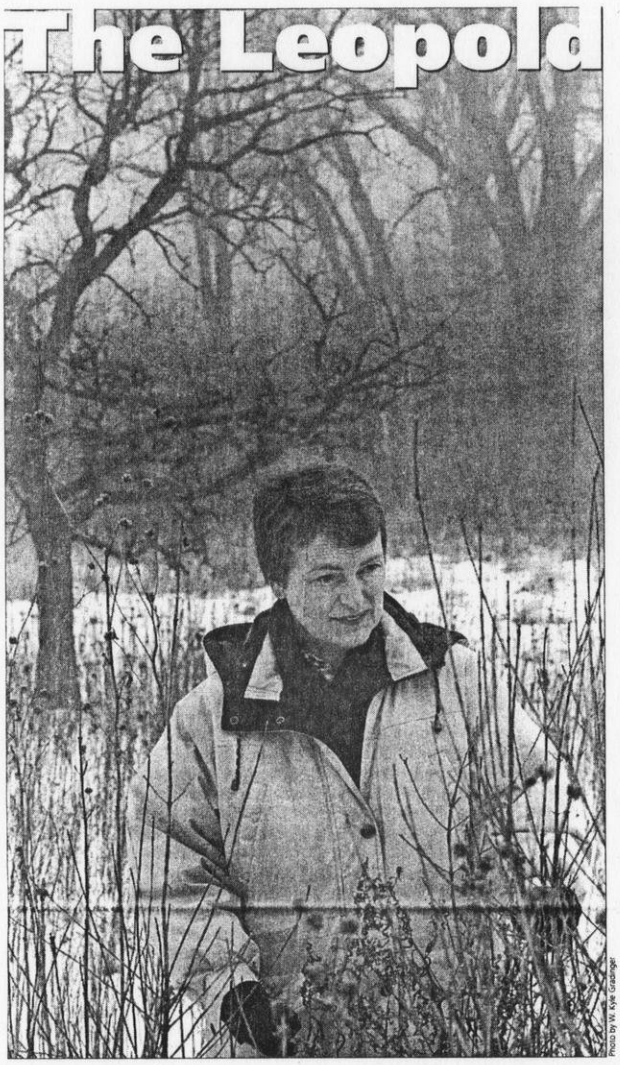


Photo by W. Kyle Gratzinger

Brian Mattmiller

Having the UW-Madison Arboretum as home research turf would be thrilling enough for most botanists. But for Joy Zedler, the Arboretum is literally a former home, a place she and her husband Paul tended as on-site caretakers 30 years ago.

Their 40-by-7-foot trailer house froze in the winter and baked in the summer, "but it was fabulous," Zedler recalls. "We had a woodchuck living underneath the house. Every day, I could watch birds out my front window. Lots of wonderful memories."

After academic careers in Missouri and Southern California, the Zedlers have come full-circle. Today, Joy's Arboretum faculty office oversees the old site of the trailer, and the memories deepen her connection to the place.

That historical connection suits Zedler's current role. As the new Aldo Leopold Chair of Restoration Ecology, she will be cultivating the legacy of one of UW-Madison's most influential professors, a man whose ideas form the roots of modern conservation.

"The concept that we need to take care of the land and respect the land is all-pervasive," Zedler says. "Leopold gave it a name: the land ethic. It's a wonderful name because it captures the whole concept of what conservation is all about."

Leopold built an academic discipline around his land ethic, beginning as UW-Madison's first professor of game management in 1933. He helped create the department of wildlife ecology and the Arboretum, where he served as the first research director.

In one of his books, *A Sand County Almanac*, Leopold observed the land not only on scientific but on emotional and aesthetic terms. The book sold millions of copies and influenced future environmental movements.

"He's considered a patron saint of conservation biology and a founding father of wildlife ecology," says Donald Waller, a botany professor.

Establishing the Leopold Chair is a landmark for the Arboretum and the botany department, Zedler's academic home. The effort began 12 years ago with the idea of advancing the university's great tradition in restoration ecology. Organizers were able to secure $2 million in public and private donations for the position.

The search committee also worked to bring the Zedlers here as a team. Paul Zedler also accepted a faculty position with the Arboretum and the Institute of Environmental Studies.

The Arboretum is composed of the largest and oldest restored ecological communities in existence, including the Curtis Prairie and Greene Prairie. The science and the tools of "healing the land" were forged there and influenced ecologists around the world, says Gregory Armstrong, director of the Arboretum.

"The Arboretum is really a living out of the land ethic," Armstrong says. "This new position will be drawing the unique assets of the Arboretum closer to the academic community."

This spring, Zedler is teaching the first graduate seminar held from start to finish on the Arboretum grounds. She is also working with a cadre of faculty from across campus on a National Science Foundation proposal, hoping to establish a restoration ecology center here.

The idea behind the NSF program perfectly reflects Zedler's philosophy: that real-world applications and basic science are inseparable. The proposal promotes good science, with knowledge and advice that can be transferred to the field. It would bridge all kinds of restoration efforts, including wetlands, old-growth forests, agricultural lands and natural lands in urban settings.

Zedler, who built her research expertise on salt-marsh ecology at San Diego State University, will be among many faculty training the next generation of experts on land restoration. Like Leopold, she has a public role of translating the science of restoration to the mainstream.

"I would like to be the glue between all the elements in the state interested in land restoration," she says.

This focused effort is critical today, says Armstrong. Land restoration is a priority nationwide, as we counter the effects of large-scale land development. It's also central to how we care for wild and natural land.

Preservation remains crucial today, Armstrong says, but it's not enough. Wild lands have typically become so fragmented and degraded that restoring them requires active help. Prairies are a perfect example, he says: Southern Wisconsin once had 7 million acres of prairies and savannas, but fewer than 1 percent remain.

The science of "healing the land" is being practiced across campus, Waller says. It's also being put to work across Wisconsin, in places like the Baraboo Hills, the Horicon National Wildlife Refuge, Nicolet National Forest and Dane County's own Yahara lakes, he says.

Zedler says the emotional bond with nature, which Leopold eloquently captured, fuels most environmental movements today. In Leopold's time, the majority of Americans still lived on the land, but people are more disconnected today by urban life.

"People have to work harder to have experiences with nature," she says. "They're willing to devote so much of their time to conservation because it's dwindling." ■

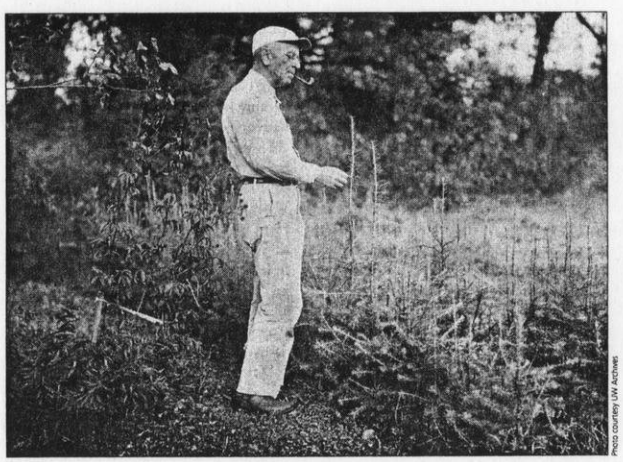


Photo courtesy UW Archives

In her new role as Aldo Leopold Chair of Restoration Ecology, Joy Zedler, above, walks the Arboretum grounds she once called home as a graduate student. Her connection to the unique landscape helps her share the emotional, aesthetic view of land conservation embodied by Leopold, left, who helped create the Arboretum before serving as its first research director.

Arboretum

FOR IMMEDIATE RELEASE 2/19/98
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(Editor's note: We've put together a news media resource Web page at http://www.wisc.edu/news/news_images/leopold.html for organizations wishing to download high-resolution B&W images to accompany this story.)

THE LEOPOLD LEGACY
ZEDLER CULTIVATES UW'S RICH TRADITION IN RESTORATION ECOLOGY

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- Brian Mattmiller, (608) 262-9772

Arboretum

1•8•4•8 NEWS
UNIVERSITY OF WISCONSIN–MADISON

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FOR IMMEDIATE RELEASE 7/10/97

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HOWARD HUGHES MEDICAL INSTITUTE GRANTS $625,000

SCIENCE EDUCATION GETS BOOST AT UW GEOLOGY MUSEUM, ARBORETUM

MADISON — With help from the Howard Hughes Medical Institute (HHMI), elementary, middle and high school science teachers from Wisconsin and beyond will have the opportunity to experience science first hand through the University of Wisconsin-Madison Arboretum and Geology Museum.

The Geology Museum and Arboretum each received separate grants and were among 45 museums and science-based institutions nationwide that received four-year grants from HHMI to help bring science to life for precollege students.

At the Arboretum, which received a grant of $425,000, the "Earth Partnership Training Program" will help train Wisconsin elementary and high school teachers to carry out ecological restorations on school grounds, a process that helps both teachers and students learn the intricacies of different Wisconsin ecosystems and better understand the human relationship with nature, said Arboretum Director Gregory D. Armstrong.

The program, directed by Molly Murray, involves summer institutes for teachers, workshops and on-site consultation by Arboretum staff. It has proved to be an effective, hands-on way to teach the intricacies of ecosystem science and restoration ecology, Armstrong said.

At the Geology Museum, awarded a grant of $200,000 by HHMI, teachers and

-more-

high school students will learn how to collect, preserve and prepare fossil specimens. In addition, they will learn how to research a subject in paleontology by defining a research question, performing the research and writing a scientific paper, according to Geology Museum Director Klaus Westphal.

Teachers in the program will also help develop paleontology lab kits with inquiry-based activities for teachers and their students.

The idea behind both programs, say Westphal and Armstrong, is to give K-12 teachers a realistic grounding in scientific practice by having them participate in bona fide scientific research. Teachers, in turn, return to the classroom with not only a better understanding of the scientific method, but with new ideas and ways to involve students in an active learning process.

"Teachers across the country are trying to move beyond textbooks and find ways for students to carry out their own scientific investigations," says Purnell W. Choppin, president of HHMI, a medical research organization and the nation's largest philanthropy. "Museums, botanical gardens, zoos and aquariums have a wealth of special resources and scientific expertise to assist schools and community groups. These collaborations can boost the quality of science education significantly."

HHMI is a medical research organization, not a foundation. Its primary activity is the direct conduct of biomedical research by HHMI scientists at 72 locations nationwide. The Institute's complementary grants program is the largest private initiative in U.S. history to enhance the quality of science education. Since 1988, HHMI has awarded more than $600 million to improve science education at all levels, and to support the research of scientists in selected countries outside of the United States.

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NEWS

UNIVERSITY OF WISCONSIN–MADISON

Arboretum

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ARBORETUM RECEIVES GIFT OF LAND

MADISON — A new reception and orientation hall for the University of Wisconsin-Madison Arboretum will become a reality, thanks to a gift of property appraised at $600,000 from local resident George Icke. This lead gift in the Arboretum's capital campaign is the largest single contribution to the Arboretum in its 60-plus-year history.

The gift has special meaning for the Icke family, which is celebrating its centennial anniversary in Madison. George Icke's father, John, first arrived here in the fall of 1897 to study engineering at UW. Upon his graduation in 1900, he became the City of Madison's city engineer. Later, he founded the Icke Construction Company, which played a major role in Madison's development in this century. George Icke and later his sons, John and Philip, operated the Icke Construction company from 1935 to the present.

The Icke family's long association with the Arboretum started in 1933 when John Icke was appointed to the Arboretum's first advisory committee. George Icke has also had a long association with the Arboretum. A life member of the Friends of the Arboretum, in 1992 he contributed the first boardwalk in an Arboretum wetland near Teal Pond. Two years ago he gave another boardwalk in the wetland near Johansen Pond, and he is also giving a new set of steps and path in Wingra Woods.

"George and his family have been an important part of the Madison community for 100 years," said Arboretum director Gregory D. Armstrong. "This gift — a typically generous act on their part — will provide us with the financial means to reach our goal of creating a wonderful place to receive visitors at the Arboretum and help them to understand and take advantage of the Arboretum and its programs."

This spring the Arboretum, with the help of the University of Wisconsin Foundation, launched a capital campaign, to gather resources for $2.8 million in major improvements to its visitor facilities and interpretive programs. To date the Arboretum has received approximately $1.5 million toward its goal.

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1•8•4•8 NEWS

UNIVERSITY OF WISCONSIN–MADISON

Arboretum

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FOR IMMEDIATE RELEASE **3/25/97**

CONTACT: Greg Armstrong, (608) 262-2748

FUTURE OF THE CAMPUS NATURAL AREAS SUBJECT OF PUBLIC MEETING

MADISON — How should the university care for Picnic Point and other beloved campus natural areas? There'll be a public meeting to discuss the future of these important lakeshore lands on April 9 from 5 to 7 p.m. at the Memorial Union.

The 325 acres of natural areas on the Madison campus, including an extensive stretch of Lake Mendota shoreline, have long been a source of educational experiences, recreation and pride for the university and citizens of Wisconsin. But without a concerted effort to preserve and restore them, these lands will suffer irreparable harm from erosion, misuse and other threats to their ecological well-being.

Scientists at the UW-Madison Arboretum recently completed a comprehensive management plan to ensure the future health of the campus natural areas. But the success of the plan depends on the support of all those who use the lands. At the meeting, representatives from the University and the Arboretum will describe the new plan and invite people from the surrounding community to help care for this beautiful lakeshore area.

"We envision a partnership between the University and the community," said Gregory D. Armstrong, the director of the Arboretum. "Our hope is that through the commitment of these groups, we will be able to heal the land in our natural areas and, in the process, improve the relationship between people and nature."

The UW-Madison's campus natural areas are among the finest at any major university. One of the largest expanses of undeveloped land left along the Lake Mendota shoreline, they provide an excellent glimpse of what the lake looked like before settlement. Their remnants of the natural biological communities and land forms of Wisconsin lend a special ambiance to the campus and Madison. They also comprise one of the best public access areas around this 10,000-acre lake.

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Arboretum

The Arboretum

A Guide to the University of Wisconsin–Madison Arboretum

Welcome to the Arboretum

As you've probably discovered already, the University of Wisconsin–Madison Arboretum is a unique and special place. Natural wonders abound, with an incredibly diverse variety of flora and fauna in every one of its 1,260 acres.

In most arboreta, collections of labeled plants—especially trees and shrubs—are arranged in a garden-like display. The UW–Madison Arboretum contains such traditional groupings in its Longenecker and Viburnum Gardens, which comprise the state's most extensive woody plant collection in their 60 acres.

As important and renowned as these gardens are, however, it is the Arboretum's native plant and animal communities that make it unique. These prairies, wetlands, and woods represent natural groupings of species that existed in Wisconsin and the upper Midwest at the time of the first European contact. When you walk in the woods or through the prairie you are experiencing a landscape similar to this historic landscape of Wisconsin—as similar as our present expertise and resources have allowed us to recreate.

Research

The Arboretum has played a leading role in developing the idea that restoration represents a powerful tool for basic ecological research. Through its commitment to ecological restoration—and the careful nurturing of its native plant communities—the Arboretum has become a respected resource on subjects as diverse as land reclamation, park and right-of-way maintenance, landscaping, and preservation of habitat for rare and endangered species.

The plants and animals that make up the Arboretum's ecological communities are the subject of constant study. Plant pathologists, limnologists, wildlife ecologists, soil scientists, horticulturists, landscape architects, and other natural scientists see the Arboretum as an important outdoor laboratory.

Classic research on the important role of fire in ecology was carried out here during the Arboretum's early years, and the Arboretum is currently creating an endowed professorship to further its efforts in research related to ecological restoration.

Public Access

More than 20 miles of trails and firelanes provide access on foot to many areas of the Arboretum. Visitors may also walk on lawns in landscaped areas and on boardwalks that run through the wetland communities—remembering, of course, not to disturb or remove plants or animals.

History and Mission

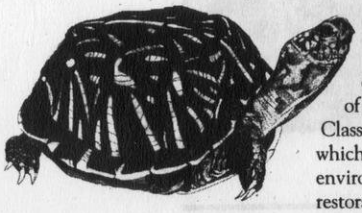
When the university purchased the land for the Arboretum—mostly during the 1930s—much of it bore little resemblance to its presettlement state. Instead, it had been turned into cultivated fields and pastures that had fallen into disuse. Because the land was so far removed from its earlier condition, the university's Arboretum committee faced extraordinary challenges in planning its revitalization. Among this group were botanist Norman Fassett, landscape designer G. William Longenecker, and wildlife ecologist Aldo Leopold.

Early on the committee decided to try to bring back the plants and animals that had lived on the land before its development. Though they may not have anticipated it at the time, their foresight resulted in the Arboretum's ongoing status as a pioneer in the restoration and management of ecological communities. In focusing on the re-establishment of historic landscapes, particularly those that predated large-scale human settlement, they introduced a whole new concept in ecology: ecological restoration. Ecological restoration is the process of returning an ecosystem or a piece of landscape to a previous, usually more "natural," condition.

Madison was a fast-growing city in the 1920s, and leading citizens saw a need to preserve open space for its residents. Most of the Arboretum's current holdings came from purchases these civic leaders made during the Great Depression. In addition to inexpensive land, the Depression brought a ready supply of hands to work it. Crews from the Civilian Conservation Corps provided most of the initial labor for establishing ecological communities within the Arboretum.

Though they were stationed here only between 1935 and 1941, the work of the CCC crews made a mark on the Arboretum that continues to this day. They played an important role in the Arboretum's first attempts at ecological restoration—their plantings eventually led to the creation of Curtis Prairie and the adjacent Leopold Pines. Efforts to restore or create other kinds of historic ecological communities have continued over the years, with the result that the Arboretum's collection of restored ecosystems is not only the oldest, but also the most extensive such collection anywhere.

Educational Programs



The UW–Madison Arboretum offers a wide array of educational programs. Each one is designed to increase awareness of the natural world and to explore the idea that human beings can have a positive relationship with nature through the restoration of native biological communities. There are classes for adults and children, individuals and groups; most emphasize a hands-on approach to learning about nature. See pages 3–6 for a current schedule.

Public Walks

Free public walks take place each Sunday. Between September and May they usually begin at 1 P.M. From June through August they are scheduled for 8:30 A.M. Meeting locations vary according to our anticipation of good floral displays or other items of seasonal interest. We also hold an evening walk once a month; meeting times depend on the time of sunset. We occasionally schedule early morning tours for special bird-watching opportunities.

These walks will give you a basic introduction to the Arboretum, its history, and the goals of the restorations of the various plant communities here. You can expect some identification of plants and animals that you encounter during the tours as well as brief scientific explanations of various ecological concepts. If a tour is especially suitable for families, we will designate it as a family outing in the tour description.

Classes

Classes at the Arboretum offer more in-depth coverage of topics than tours provide. Classes cover the various ways in which humans interact with the environment; natural history; restoration; the arts; and opportunities for families to learn together. Many of the classes focus on ways for you to engage in restoration activities on your own property.

School Tours

School tours are designed to introduce children to the Arboretum as an outdoor teaching and research laboratory for the university. Children learn about native Wisconsin ecosystems and ways to restore them. We also have tours that emphasize special aspects of the Arboretum. Among these are tours of the Effigy Mounds, built about 1,000 years ago by the woodland culture; birding excursions in the spring; and special Earth Partnership tours for classes engaging in restorations at their schools.

Earth Partnership

Earth Partnership programs for the public include volunteer work days. These activities allow people to volunteer for restoration projects at the Arboretum and learn about the ecosystems they are helping to restore. Earth Partnership activities occur every month on a drop-in basis. Those who wish to specialize in certain restoration activities, such as propagation, are able to arrange special times for training with the staff member in charge. Other volunteers work with the Arboretum ecologist by adopting areas or plots to work on individually or in small groups with one-on-one guidance from the ecologist. Call 263-7760 for additional information on getting involved in our Earth Partnership programs.

Earth Partnership for Teachers

The Earth Partnership program for teachers is an Arboretum outreach program to train teachers to establish restoration projects on school sites and to alter their curricula to incorporate restoration in almost any subject area. This program includes a two-week workshop each summer and ongoing support from Arboretum staff to help schools with restoration planning and curriculum development.

Earth Focus Day Camp

This camp offers special outdoor, hands-on activities for children during the summer. Children explore different ecosystems in the Arboretum and learn about natural systems and how humans can have a positive relationship with nature. There are separate sessions for 6- to 7-year-old and 8- to 10-year-old children; preschool children learn together with a parent or adult friend.

Volunteering at the Arboretum

Do you enjoy spending time at the Arboretum? Would you like to learn more about the prairies, woodlands, wetlands, or woody plant collection? Do you have talents and interests to share?

Here's a chance to work in an internationally recognized research facility, meet people with similar interests, and do something positive for the environment in your own backyard!

As a volunteer you may choose to work in any area that interests you. The Arboretum offers both indoor and outdoor volunteer opportunities:

- Volunteer stewards
- Restoration projects
- Gardening in the woody plant collection
- Receptionist duties at the McKay Center
- Clerical work (data entry, mailings)
- Archival assistance
- Naturalists' assistants
- Plant propagation activities

To volunteer your services and share your knowledge and expertise, please call the volunteer program office at 263–7760.

Friends of the Arboretum Membership Application

FRIENDS OF THE ARBORETUM is an important support group that helps the UW Arboretum fulfill its mission. Membership in the Friends is a commitment to the principles and practice of restoration ecology. It is also an opportunity to join in a variety of workshops, field trips, and special events. The strength of the Friends lies in its members' willingness to support the Arboretum with their time, talents, and membership dues. Many Friends also volunteer in activities such as seed collecting and the Wingra Oak Savanna Restoration Project.

Friends of the Arboretum Membership Contribution

- ☐ Individual $25
- ☐ Family $35
- ☐ Senior/Student $20
- ☐ Supporting $50
- ☐ Business/Associate $100
- ☐ Patron $250 or more

Please make check payable to the Friends of the Arboretum, Inc., 1207 Seminole Highway, Madison, WI 53711. Your contribution is tax-deductible to the extent allowed by law.

Join us today!

Name_____

Address _____

City_____ State_____ Zip_____

I am interested in volunteering for:

- ☐ Receptionist duties at the McKay Center
- ☐ Assistance with mailings and clerical work
- ☐ Volunteer stewards
- ☐ Restoration and propagation activities
- ☐ Gardening in woody plant collection
- ☐ Newsletter—reporting, writing, artwork
- ☐ Archival work

1996 Free Public Tours and Events

MAY

WALKING IN THE ARBORETUM: EARLY MAY

May is one of the most beautiful times in the Arboretum. Early in the month you can see a carpet of wildflowers along the trails of Wingra and Gallistel woods. The best places are near the Effigy Mounds in both woods, and the trail in Gallistel Woods that leads from the Panther Mound down to the CCC stone building. It is also a pleasant time to walk from the Effigy Mounds in Wingra Woods down toward the Big Spring. Be sure to look up now and then for the migrating warblers. The area around the springs is a particularly fine place to see many bird species.

SATURDAY, MAY 4
Night Walk. Evening is a pleasant time to see the wildflowers, catch the evening songs of birds and hear the first night sounds of frogs. Meet at McKay Center. 7–9 P.M.

SUNDAY, MAY 5
Walk Near the Dawn. A great time to hear birds both residents and migrants. Meet at McKay Center. 6:30–8 A.M.

SUNDAY, MAY 5
Woodland Walk. More wildflowers join the busy woodland display. Wood anemone, bellwort, bluebells, and trillium may be blooming. Meet at Wingra/Gallistel lot. 12–1:30 P.M.

SUNDAY, MAY 5
Tour for Families: Stories of Spring. Meet at McKay Center. 1:30–2:30 P.M.

SUNDAY, MAY 5
Public Reception to Open Photography Exhibit. Music by Wisconsin Youth Symphony members. McKay Center, 2–4 P.M.

WEDNESDAY, MAY 8
Longenecker Gardens Tour. The first of our summer tours of the gardens. Meet at McKay Center. 6:30 to 8 P.M.

SATURDAY, MAY 11
Earth Partnership for Families: Songs of the Prairie. A morning birding program for families. 6:30–8:30 A.M. Pre-register at 263-7888.

SUNDAY, MAY 12
Mothers' Day Special Short Tours. All leave from the McKay Center. 1, 2, and 3 P.M., plus a 1:30 tour for families with younger children.

WEDNESDAY, MAY 15
Evening Walk in Longenecker Gardens. Meet at McKay Center. 6:30–8 P.M.

WALKING IN THE ARBORETUM: LATE MAY

By the middle of May Greene Prairie puts on a spectacular show with acres of lupine in flower. Mixed in among the grasses are thousands of blue-eyed grass and yellow star flowers twinkling up at you. Greene Prairie was burned the first week of April this year. Burning is important for the flowering of many prairie plants because it removes the dead stems and leaves from the previous year. Many times in mid-May there are more than 40 species of plants in bloom and you can see up to 25 species of birds during a two-hour walk.

In late May, walk into Leopold Pines to see plantings of northern wildflowers. You can find them along the fire-lane in the middle of the woods, and along the trails marked by signposts D7 and D8.

SUNDAY, MAY 19
Prairie Spectacular! The prairies and savannas of the Grady Tract will have as many as 40 species of plants in bloom, including acres of lupine. Meet at Grady lot. 1–3 P.M.

WEDNESDAY, MAY 22
Longenecker Gardens Walk. Crabapples and/or lilacs should be at their peak. Meet at McKay Center. 6:30–8 P.M.

SUNDAY, MAY 26
Tour: Northwoods Wildflowers and West Curtis Prairie. Haven't been up north this spring? See our small restored area of wildflowers native to northern pine forests, including gaywings. Meet at west Curtis parking lot. 1–2:30 P.M.

WEDNESDAY, MAY 29
Longenecker Gardens in Late Spring. Meet at McKay Center. 6:30–8 P.M.

May is Wildflower Month at the Arboretum

We have a series of events and tours that will enable you to enjoy the restored communities and the many years of efforts made to bring native wildflowers into former farm fields.

Events this month include a photography exhibit from May 5 to June 9 with an opening reception on the 5th. The Friends of the Arboretum hold their annual plant sale on May 11 from 9 A.M. to 2 P.M. near the McKay Center.

We'll celebrate the Wingra Oak Savanna Restoration with a picnic, planting, and activities on May 19 at 2 P.M. We are fortunate to have Nina Leopold Bradley as keynote speaker. The daughter of Aldo Leopold, she is an active conservationist and inspirational speaker.

Refreshments will be provided. See the classes and tours sections for other events.

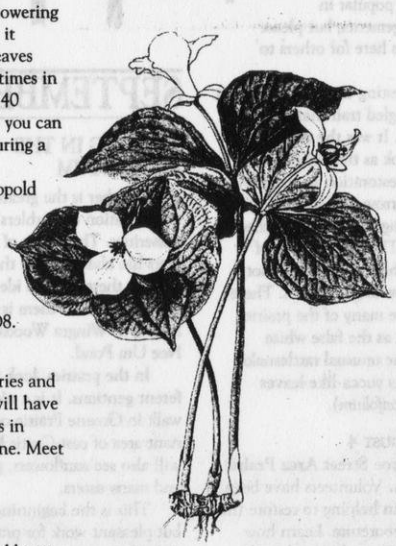
JUNE

WALKING IN THE ARBORETUM

Beginning in June, there are often too many mosquitoes to enjoy walking for long in the woodlands. Most summer tours emphasize the prairies and Longenecker Gardens. If you come at night, you might see fireflies sparkling among the grasses of the gardens and prairies. Giant silk moths emerge in the middle of the month.

But the prairies put on a show all summer. If you can come for a walk every two weeks or so, you will see a different display each time in the prairies. With more than 300 species of plants in total, there are up to 14 different species coming into bloom each week. Some are much more noticeable than others, of course.

Warm summer days are also good times to see the many butterflies and other interesting insects of the prairie ecosystem. Since Greene Prairie and east Curtis Prairie were burned in early April, they will be good places to see wildflowers this year. Central Curtis Prairie is not on the burning schedule, so as you walk in Curtis Prairie see if you can tell the difference in flowering and height of the grasses between the burned and unburned areas.



The fact that prairies are adapted to fire and benefit from an occasional burn was discovered here by John Curtis and his students in a series of experiments during the 1940s as they tried to understand how to restore a prairie on this former farmland. Curtis Prairie is the first attempt by humans to restore a prairie, as far as we know, and has been the site of many significant scientific studies that have led to greater knowledge about prairies and prairie restoration.

SUNDAY, JUNE 2
Prairie in Pastel Colors: Tour of Greene Prairie. Tiny flowers of yellow star grass, pale blue-eyed grass and pink phlox dominate the prairie now. Meet at Grady lot. 8:30–10:30 A.M.

WEDNESDAY, JUNE 5
Evening Walk in Longenecker Gardens. Meet at McKay Center. 6:30–8 P.M.

SUNDAY, JUNE 9
Curtis Prairie Tour. This is the time that the prairie baptisia (false indigo) can be spectacular. Compare the burned and unburned areas of the prairie to see the influence of fire on the prairie. Meet at McKay Center. 8:30–10 A.M.

WEDNESDAY, JUNE 12
Evening Walk in Longenecker Gardens. Meet at McKay Center. 6:30–8 P.M.

SATURDAY, JUNE 15
Wait Until Dark Night Walk. Rather than walking under the full moon, which was on June 1, tonight we want to avoid the moonlight so we can attract the giant moths of June and other insects to lights. Meet at McKay Center. 8–10 P.M.

SUNDAY, JUNE 16
Tour of the Monroe Street Prairie, Savanna, and Wetlands. There is much cultural and historical history in this small portion of the grounds with Native American habitation going back at least 4,000 years and early pioneer life centered around the springs. Meet at Spring Trail Pond lot. 8:30–10:30 A.M.

WEDNESDAY, JUNE 19
Evening Walk in Longenecker Gardens. This is a good time to see shrubs or trees of interest for the home landscape. Meet at McKay Center. 6:30–8 P.M.

SUNDAY, JUNE 23
Tour of Greene Prairie. One feature of the prairie is that its flowering plants must hold their flowers higher and higher as the season progresses and the plants grow taller. Today we will see flowers much taller than those in the early spring. Meet at Grady lot. 8:30–10:30 A.M.

WEDNESDAY, JUNE 26
Evening Walk in Longenecker Gardens. These gardens are not only beautiful but full of experiments on the suitability of woody plants for the Wisconsin climate. Meet at McKay Center. 6:30–8 P.M.

SATURDAY, JUNE 29
Once in a Blue Moon Night Walk. Learn the meaning of this phrase and other night lore as you enjoy a summer evening walking Arboretum trails with our naturalists. Meet at McKay Center. 8–10 P.M.

SUNDAY, JUNE 30
Tour of Greene Prairie. Visit this spectacular restored prairie to see the success of Henry Greene and current problems caused by new urbanization. Meet at Grady lot. 8:30–10:30 A.M.

JULY

WALKING IN THE ARBORETUM

During July many people like to walk the prairies to enjoy "A Prairie Birthday," inspired by an essay of the same name by Aldo Leopold in *A Sand County Almanac*. The essay is a very moving testament for preservation of native species. It also points out the pleasure and educational nature of keeping a journal recording the timing of natural events from year to year, such as when the first flower of a species occurs.

The silphiums bloom in July. We have four species in the Arboretum. The compass plant with coarsely divided leaves is naturally found west of Dane County. The prairie dock, with its large "elephant-ear" leaves once grew mostly east of Dane County. The other two species are cup plant and rosin weed. You will notice their sunflower-like flowers throughout Curtis and Greene Prairies.

SUNDAY, JULY 7
Tour of Curtis Prairie. "A Prairie Birthday" is a famous essay in Aldo Leopold's *A Sand County Almanac*. We will see the compass plant he wrote about, as well as other July bloomers, in this oldest of restored prairies. Meet at McKay Center. 8:30–10 A.M.

WEDNESDAY, JULY 10
Evening Walk in the Gardens. Learn about shrubs and trees appropriate to the home landscape. Meet at McKay Center. 7–8:30 P.M.

SATURDAY, JULY 13
Night Walk. This is an opportunity to see midsummer flowers on the prairies as well as learn about the many insects in this habitat that make night music. Meet at McKay Center. 8–10 P.M.

SUNDAY, JULY 14
Tour of the Grady Tract and Greene Prairie. Visit the Grady savanna restorations and Greene Prairie, one of the finest prairie restorations in the state. There may be up to 40 species flowering during this midsummer visit, particularly since these areas were burned in early spring. Meet at Grady Tract lot. 8:30–10:30 A.M.

WEDNESDAY, JULY 17
Evening Walk in the Gardens. Meet at McKay Center. 7–8:30 P.M.

SUNDAY, JULY 21.
Tour of Curtis Prairie. This is a good time of year to see how the different burn-management techniques affect the flowering and weed problems on the prairie. It is also a time of lavenders and yellows as the bee balm and yellow coneflowers take their turn in the blooming sequence. Meet at McKay Center. 8:30–10 A.M.

WEDNESDAY, JULY 24
Evening Walk in the Gardens. Meet at McKay Center. 7–8:30 P.M.

SUNDAY, JULY 28.
Tour of the Grady Tract and Greene Prairie. Depending on how the season has been, this could be a time for a spectacular display of yellow and lavender flowers as the sunflower and silphium families are joined by the blazing stars. Meet at Grady Tract lot. 8:30–10:30 A.M.

WEDNESDAY, JULY 31
Evening Walk in the Gardens. This will be the last of our summer walks in the gardens. Meet at McKay Center. 7–8:30 P.M.

AUGUST

WALKING IN THE ARBORETUM

August is a special month on the prairies—the time when you can best begin to understand how the pioneers felt when they first encountered this vast ecosystem.

As the tall grasses head out with flowering stalks, they often grow over nine feet tall. The giant sunflowers can be almost as tall, and the other species are in the four- to five-foot range as they shout for attention from the pollinators with their bright yellow or lavender flowers. The blazing stars (*Liatris*) are becoming popular in florists' arrangements, but please leave the ones here for others to enjoy.

An interesting trail during August is the long angled trail that traverses Curtis Prairie. It was the trail the CCC boys took as they planted and watered this restoration in the 1930s. It is a very narrow trail that can give you that feeling of what the pioneers experienced. The western part of Curtis, near the Curtis parking lot, also has narrow angular trails. These trails will have many of the prairie legumes, such as the false white indigo, and the unusual rattlesnake master with its yucca-like leaves (*Eryngium yuccifolium*).

SUNDAY, AUGUST 4
Tour of Monroe Street Area Prairie and Savannas. Volunteers have been instrumental in helping to restore this area of the Arboretum. Learn how they are helping in this vital work. Marion Dunn Prairie is named for a wonderful volunteer who helped us in this area. Meet at the parking lot on the corner of Monroe St. and Arbor Dr. 8:30–10:30 A.M.

SATURDAY, AUGUST 10
New Moon Walk. After the sun sets this will be a real walk in the dark. It is a time to see underwing moths and hear the late summer crickets. Meet at McKay Center. 7:30– 9:30 P.M.

SUNDAY, AUGUST 11
Curtis Prairie Tour. Visit the prairie as it reaches its full glory of bloom and height. Experience how the pioneers felt as they crossed the uncharted sea of grass that was the midwestern tallgrass prairie. Meet at McKay Center. 8:30–10 A.M.

SUNDAY, AUGUST 18
Tour of the Grady Savannas and Greene Prairie. Does prairie dropseed really smell like buttered popcorn when it is in bloom? Why do the grasses have such beautiful tiny flowers if they are wind-pollinated? Meet at Grady Tract lot. 8:30–10:30 A.M.

SUNDAY, AUGUST 25
Curtis Prairie Tour. As we alternate visiting the prairies all summer you can see the remarkable changes in blooming species in just two weeks' time. Meet at McKay Center. 8:30–10 A.M.

SEPTEMBER

WALKING IN THE ARBORETUM

September is the greatest time for migration of warblers and other passerines. The colors of many warblers has changed and they are quiet, making them hard to identify. A good place to look for them is by the Big Spring in Wingra Woods, or by Ho Nee Um Pond.

In the prairies, look for the different gentians. It is a nice time to walk in Greene Prairie or in the remnant area of east Curtis Prairie. You will also see sunflowers, goldenrods and many asters.

This is the beginning of intense but pleasant work for prairie restorationists as it is time to gather many seeds that are maturing. Seeds from the Arboretum are only collected by those with permits. They have been used to start many prairies in parks around the area.

TOURS

SUNDAY, SEPTEMBER 1
Tour of Some Arboretum Ponds. Teal Pond is very natural-looking even though it is a restoration effort. We have had to add many ponds to Arboretum property since 1935 as the city grew up around us. Find out why these ponds are important to the entire city. Meet at McKay Center. 1–3 P.M.

SUNDAY, SEPTEMBER 8
Voices of the Past. Learn about the cultural history of the Arboretum from 4,000 years ago to the present. Our naturalist will use stories and writings to give you a feeling for the lives of people who lived here before. Meet at Wingra/ Gallistel lot. 1–3 P.M.

SUNDAY, SEPTEMBER 15
Fall Bird Walk. Meet for a morning walk to observe migrating birds, including the confusing fall warblers and other neotropical migrants. Begin at McKay Center. 7–9 A.M.

SATURDAY, SEPTEMBER 21
Night Walk. This walk will be under the harvest moon. We probably won't sing old songs about it, but it is a good time to observe the last insects of the season, if we have not had a killing frost, and the fall migration of birds. Meet at McKay Center. 6:30–8:30 P.M.

SUNDAY, SEPTEMBER 22
Tour of Greene Prairie. Gentians, asters and the last goldenrods mingle their lavender and yellow hues with the red and gold tinges of the native grasses. Did you know the prairie grasses have fall colors as brilliant as the famous fall foliage of the trees? Meet at the Grady Tract lot. 1–3 P.M.

SUNDAY, SEPTEMBER 29
Fall Sampler Tour. The Arboretum is famous for its restored prairie and woodland communities. Enjoy the colors of these communities that made southern Wisconsin "one of the most exquisitely beautiful regions I have ever seen in any part of the world," according to George Featherstonehaugh, an Englishman traveling here in 1835. Meet at McKay Center. 1–2:30 P.M.

OCTOBER

WALKING IN THE ARBORETUM

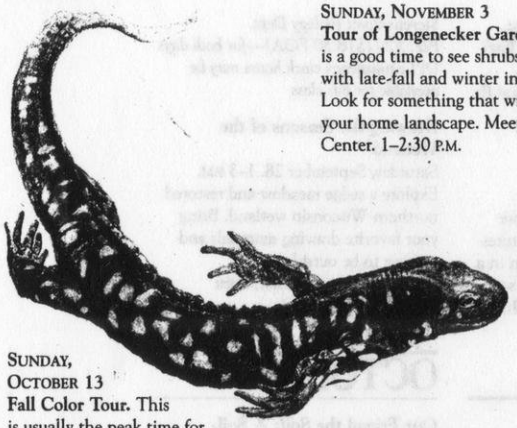
The great event this month is the climax and conclusion of the parade of fall colors that began in late August. Typically, this peaks about mid-month with the brilliant red, orange and yellow of the sugar maple. A walk in Gallistel or Wingra woods is especially pleasant now.

A special place is by the Effigy Mounds in Wingra Woods where you can look downhill toward the lake and see the layers of color.
In the prairies, the asters offer the final burst of color and the last bit of nectar for the butterflies that migrate or overwinter as adults. Look for the departing monarchs and the red admiral, mourning cloaks, and comma butterflies as they prepare to hide for the winter. In the gardens you may see flocks of bluebirds, robins, and other thrushes eating berries.

TOURS

SUNDAY, OCTOBER 6
Fall Color Tour. View the forest and prairie in their autumn splendor. If there has been enough rain, we might find some unusual fungus, too. It is also a good time to see flocks of

cedar waxwings, juncos, robins, and other birds feasting on bountiful berries. Meet at McKay Center. 1–2:30 P.M.



SUNDAY, OCTOBER 13
Fall Color Tour. This is usually the peak time for fall color in the foliage of our native trees. The yellows of the sugar maples planted in Wingra and Gallistel woods 30 to 50 years ago are starting to give the feel of a true maple woods. Enjoy the sights, smells and sounds of autumn. Meet at Wingra/ Gallistel lot. 1–2:30 P.M.

SATURDAY, OCTOBER 19
Night Walk. This full moon was called the "moon of the falling leaves" by some native American groups. What would your name for it be? Enjoy an autumn evening in the relative quiet of the Arboretum. Meet at McKay Center. 6–7:30 P.M.

SUNDAY, OCTOBER 20
Walk with Leopold. Aldo Leopold was one of the founders of the Arboretum. His poetic prose leads us to different sites to "find some undiscovered place under everybody's nose," at the Arboretum. Meet a naturalist who will read from Leopold's writings at the McKay Center. 1–2:30 P.M.

NOVEMBER

WALKING IN THE ARBORETUM

Look for winter residents and winter visitors among the bird life in the woodlands. Red-breasted nuthatches, golden-crowned kinglets, brown creepers, juncos, tree sparrows, and siskins have arrived from farther north. Year-round residents like the blue-jays, white-breasted nuthatches, chickadees, and woodpeckers can be found throughout the woodlands.

Aldo Leopold said, "The wind that makes music in November corn is in a hurry." November can be a time of changeable weather brought by the winds and Arctic air masses. In Wisconsin these changes are best remembered by the Armistice Day storm that trapped many hunters dressed for mild weather and for great storms on the Great Lakes including the one that took the *Edmund Fitzgerald*.

If a mild "Indian summer" day occurs after the killing frosts, enjoy it by walking along the shoreline trail of Lake Wingra where there will be birds enjoying the springs. Walk east from the big spring to the path among the hemlocks and yellow birch to enjoy their contrasting colors and textures.

TOURS

SUNDAY, NOVEMBER 3
Tour of Longenecker Gardens. This is a good time to see shrubs and trees with late-fall and winter interest. Look for something that will enhance your home landscape. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, NOVEMBER 10
Tour of the Monroe Street Environs. We will visit the historical natural landscapes designed by William Longenecker and Jens Jensen and the restorations of savanna and prairie. Meet at Spring Trail Pond parking lot. 1–3 P.M.

SATURDAY, NOVEMBER 16
Night Walk. Some native Americans called this the "moon when deer drop their antlers." When male deer no longer need antlers to prove their worthiness for mating, they drop them. The antlers are quickly recycled for their minerals by mice and other small mammals. We won't find antlers but it is an interesting time of year for a quiet walk. Meet at McKay Center. 6:30–8 P.M.

SUNDAY, NOVEMBER 17
Thinking Like an Arboretum. In 1975 Orie Loucks posed the question of whether we could learn to "think like an Arboretum and support efforts to maintain integrity in its biotic communities." This tour explores the ecological and humanistic aspects of that question within the Arboretum's gardens, woodlands, and prairies. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, NOVEMBER 24
Geology of the Arboretum. Learn about the Arboretum's geological history on the edge of the glacier. Meet at McKay Center for a slide presentation, followed by a hike. 1–3 P.M.

DECEMBER

WALKING IN THE ARBORETUM

Get away from the hustle and bustle of this time of year with a quiet walk at the Arboretum. Visit the reception area of the McKay Visitor Center for a cup of hot chocolate after your hike or ski trip. Tours will occur even if weather is bad.

If you dress properly you can enjoy a hike and pleasant surprises along the trails or in the gardens. Since evening comes early you might encounter the crepuscular animals such as whitetail deer. If there is snowfall, look for tracks of raccoon, fox, and mink. A good spot to see tracks is near Teal Pond. In the conifers around the pond you can look for pine siskins, crossbills, and purple finches.

It is even a time for a sign of spring. The hooting of the great horned owl means it's mating time. The owls will lay eggs in January. Please do not use artificial means to call to them. We don't want them to think that some other owl has nested here.

Longenecker Gardens will still have a colorful display of fruit in the crabapple collection, and robins and cedar waxwings can be found feasting there.

SUNDAY, DECEMBER 1
Winter Birds. It's surprising how many very small birds stay here all winter long. Learn how they do it and what you can do to observe and even help them with your home landscape. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, DECEMBER 8
Conifer Tour. Learn characteristics of the conifers of Longenecker Gardens and a few of the Arboretum's restored communities at a time of the year when they are truly evergreen. Meet at McKay Center. 1–3 P.M.

SUNDAY, DECEMBER 15
Preparing for Winter. This tour will explore the changes plants and animals undergo in preparing themselves for the cold and snow. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, DECEMBER 22
In the Bleak Mid-winter. The winter solstice was of great importance to people until recent times. Many of us today wouldn't notice it if the weather forecasters didn't tell us about it. It is part of the knowledge that we have lost in modern times. Come rediscover the particular beauty of this time of year, the quality of the diminished light, and the joy of knowing that the days are getting longer again. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, DECEMBER 29
Snow. Whether we have it or not, we will talk about snow—its characteristics, what it means for plant and animal life, and how it affects what plant communities thrive in this area. Meet at McKay Center. 1–2:30 P.M.

TUESDAY DECEMBER 31
Second Annual New Year's Eve Walk. Last year's walk was so successful, we thought we'd offer it again. Join us for a quiet evening at the Arboretum before you go off to noisier pursuits or the warmth of your home. There is no finer ceiling for a gentle farewell to 1996 than the stars or clouds overhead. Meet at McKay Center. 6:30–8 P.M.

PLEASE HELP US!

We would like to know whether you find this guide useful. Please answer the questions below, and you will have your name entered in a drawing. We will give away many items (maps, notecards, guidebooks), so you will have more than one opportunity to win a thank-you gift!

Please mail this form to: UW Arboretum, 1207 Seminole Highway, Madison, WI 53711. Attention: Donna Thomas. Or, leave it at the McKay Visitor Center during public hours (Mon.–Fri. 9 A.M. to 4 P.M.; Sat.–Sun. 12:30 to 4:30 P.M. through May 31 and 11 A.M. to 3 P.M. June through August). Thank you!

First name_____ Daytime telephone number_____
(to be called only if name is drawn for gift)

How often do you visit the Arboretum?
Daily ____ 1 or 2 times/week ____ 1 or 2 times/month ____
A few times each year ____ This is my first visit ____

Have you been to the Arboretum's McKay Visitor Center? yes____ no____

Are you a member of the Friends of the Arboretum? yes____ no____

Did this guide provide you with information about the Arboretum that you did not know before? yes____ no____

If yes, what information was new to you? _____

Did you . . .
Use the map? yes____ no____
Read the classes/tours information? yes____ no____
Keep the guide after your visit? yes____ no____
Other things you would like to see included in the guide: _____

Comments: _____

1996 Classes

Classes meet at the McKay Center unless otherwise indicated. Please note that pre-registration is requested for some classes. To pre-register, call 263-7888. Many classes are free. Friends of the Arboretum receive a discount on all Arboretum classes. To join FOA, see the form on page 2 of this guide or call 263-7760.

MAY

Introduction to Spring Wildflowers
Saturday, May 4. 1 P.M.–3 P.M. Learn identification and ecology of woodland wildflowers at the height of their splendor.
Instructor: Jobelle Shands, naturalist
Fee: $9.50 ($8 FOA)

Drawing the Seasons of the Wetland
Saturday, May 18. 1–3 P.M.
Explore a sedge meadow and restored northern Wisconsin wetland. Bring your drawing materials and prepare to be outside.
Instructor: Pamela Nesbit, artist
Fee: $9.50 ($8 FOA)

All About American Indian Cultures in the Arboretum
Saturday, May 25. 1–3 P.M.
Native Americans occupied what is now the Arboretum as long as 4,000 years ago. Learn about their various cultures through the centuries, including the Effigy Mound Builders.
Fee: $3 ($2.50 FOA)

Earth Focus Day Camp for Children begins in June and runs through August.
See separate flyer for details or call 263-7888.

JUNE

All About Songsters of Greene Prairie
Saturday, June 1. 7:30–9:30 A.M.
Who is that singing in the grass? Learn about the birds who nest in grasslands such as Greene Prairie. Meet at Grady Tract parking lot.
Instructor: Sylvia Marek, naturalist
Fee: $9.50 ($8 FOA)

Earth Partnership for Families: Bison! Giants of the Grasslands.
Saturday, June 8. 1–3 P.M. .
Twenty to forty million bison once roamed the prairies of the Midwest. Learn about this magnificent beast and how native Americans depended upon it for food, clothing, and shelter. Musical instruments and toys came from bison, too!
Please pre-register.

Attracting and Trapping Night Insects
Friday, June 14. 8:30–11:30 P.M.
Explore the ways of night insects by luring and catching them for rearing and further study.
Instructor: Mark Evans, entomologist
Fee: $3 ($2.50 FOA)

JULY

Annual Butterfly Count
Sunday, July 7. 9 A.M. This will be the seventh annual butterfly count at the Arboretum. In the past we have seen as many as 28 different species and a total of 233 individuals. Some species include the red-spotted purple, viceroy, spring azure, Aphrodite fritillary, Edwards hairstreak—enchanting names for beautiful "flying flowers." Join in this important monitoring of butterfly health.
Instructor: Karl Legler
Call 255-BIRM for last-minute info.

Earth Partnership for Families: What's That Buzzing in Your Ear?
Saturday, July 13. 10 A.M.–noon.
Investigate the small creatures that fly, crawl, and jump in the prairie.
Please pre-register.

All About Ponds
Saturday, July 20. 9 A.M.–noon.
Join our naturalists as they explore Arboretum ponds. Look for creatures that make up the rich food chain in a pond. We will also use lenses to see the small members of the food chain.
Fee: $3 ($2.50 FOA)
Please pre-register.

AUGUST

All About Weavers and Wanderers of the Prairie
Saturday, August 17. 10 A.M.–noon.
Come and discover the magic of the wandering monarch butterflies and the amazing orb-weaving spiders. An introduction to the diversity of the prairie and the variety of flowers and the residents that use them to survive.
Instructor: Sylvia Marek
Fee: $3 per person ($2.50 FOA)
Please pre-register.

Earth Partnership for Families: Prairie Flowers
Sunday, August 18. 2–4 P.M.
An August prairie is like a living painting. Jump into a prairie painting and become a nature detective in search of patterns, shapes, and colors. Each family will take home an artistic impression of the prairie.
Please pre-register.

SEPTEMBER

Fall Wildflowers
Saturday, September 14. 1–3 P.M.
Introduction to the identification and ecology of prairie and woodland wildflowers. Find out why the prairie could be called daisyland. Learn the truth about goldenrods. Meet at Grady Tract parking lot.
Instructor: Jobelle Shands, naturalist
Fee: $9.50 ($8 FOA)

Earth Partnership for Families: Time Machine
Saturday, September 14. 1–3 P.M.
Take a journey through time to learn about Wisconsin rocks and soils. Travel through the ages to see an ancient ocean. Imagine climbing a glacier to see a mighty mammoth. Discover how the water and ice shaped our land and formed the foundation for our soils.
Please pre-register.

Introduction to Grass Taxonomy
Friday, September 20, 12:30–5:30 P.M. and Saturday, September 21, 9 A.M.–5 P.M. This two-day workshop is an introduction to the grasses of the upper Midwest, including structures, terms, evolution and classification, identification of common grasses, and their ecology.
Instructor: Dr. Robert Freckman, UW–Stevens Point Biology Dept.
Fee: $20 ($18.50 FOA)—for both days
DPI equivalency clock hours may be available for this class

Drawing the Seasons of the Wetland
Saturday, September 28. 1–3 P.M.
Explore a sedge meadow and restored northern Wisconsin wetland. Bring your favorite drawing materials and prepare to be outside.
Instructor: Pamela Nesbit, artist
Fee: $9.50 ($8 FOA)

OCTOBER

Our Friend the Soil: A Soil-Introduction for All Ages
Saturday, October 5. 9–11:30 A.M.
Let's take a walk—mindful of the soil on which we tread. The soil is a hidden "root domain" of darkness and silence; we may feel excluded from it. We are creatures of the "leaf domain," regularly flooded with sunlight.

Begin with an hour of soil talk in the McKay Center and enjoy images brought back to us from "soil space" by soil explorers, poets, and scientists. Then we will walk outside together, and perhaps sing some soil songs and have a soil meditation. We will use a soil probe to bring up soil "pedopsies" and converse with the soil.
Instructor: Dr. Francis Hole, UW Soil Science Dept.
Fee: $3 ($2.50 FOA)

Seed Collecting
Saturday, October 12. 1–3 P.M.
Learn about basic seed collection and handling techniques for use in personal restoration projects.
Instructor: Kristin Scheele, Arboretum naturalist
Fee: $9.50 ($8 FOA)

NOVEMBER

Winter Botany
Saturday, November 2. 1–3 P.M.
We'll learn to identify trees and shrubs after leaf-fall, making use of keys to field characteristics. Bring a hand lens if you have one; we will have some available here.
Instructor: Dr. John W. Thomson, UW Botany Dept. Emeritus
Fee: $9.50 ($8 FOA)

Remembering Laura Ingalls Wilder
Saturday, November 2. 10 A.M.–noon. What was it like to attend a one-room school house on the vast prairie? To find out, come to the Arboretum and visit a "pioneer school." Take a walk and learn about the prairie through Laura's experiences.
Fee: $3 ($2.50 FOA)

Propagating Ferns
Saturday, November 9. 10 A.M.–noon. Learn to raise ferns from spores, and take a few home in time to harden up before spring planting.
Instructor: Tim Kessenich, DNR
Fee: $9.50 ($8 FOA)

CLASS REGISTRATION

Mail this form, with checks payable to "UW-Madison Arboretum," to: Classes, UW Arboretum, 1207 Seminole Hwy., Madison WI 53711. If you are registering for more than one class, please send separate checks for each one so that we can refund your money if a class is full. Space cannot be held without an accompanying fee. Fees will be refunded only if a class is filled or canceled due to low enrollment. Confirmation and directions are sent upon receipt of fee. Please call 263-7888 if you have questions.

Name _____

Address _____

City / State / Zip _____

Please list the programs for which you are registering. Enclose separate checks for each program. _____

_____

Please fill out form on reverse side.

Ecological Communities

Restoration of the Arboretum's ecological communities is an ongoing effort, which depends heavily on the help of volunteers. Be sure to tell us if you'd like to get to know these communities better by participating in the work of restoring them.

Prairies

More than 300 species of native plants flower here in unbroken succession from April through October.

Curtis Prairie

The world's oldest restored prairie, Curtis Prairie occupies 60 acres just south of the McKay Center. Many classic experiments on planting techniques and the use of fire in prairie management took place here during the 1940s. In early fall this deep-soil tallgrass prairie displays 10-foot tall big bluestem grass, and Indian grass nearly as tall.

Greene Prairie

This 50-acre prairie restoration lies along the southern boundary of the Arboretum. Planted nearly single-handedly by botanist and prairie expert Henry Greene, this is the Arboretum's most successful replica of native prairie. The prairie wildflowers are especially showy against the background of shorter prairie grasses, including little bluestem and prairie dropseed.

Wingra Oak Savanna

Oak savannas are groves of open-grown oaks in a grassland setting. Though they are now very rare, they were once widespread in southern Wisconsin. At this site, the Arboretum is restoring a grove of magnificent open-grown bur oaks by removing the current understory of weeds and non-native trees and shrubs and replacing them with species thought to have grown in the original savannas. A special relationship with the Dudgeon-Monroe Neighborhood Association has led to an active group of volunteers joining this coordinated restoration effort near Green Prairie.

Deciduous Forests

Woodland flowers bloom in spring, followed by shady summer foliage and brilliant color in autumn.

Noe Woods

A 41-acre white oak/black oak woods, typical of many woods that developed on former savanna sites after settlement put an end to the fires that had maintained the savannas. Many of the trees are approximately 150 years old, dating back to when the fires ceased.

Wingra and Gallistel Woods

This large block of oak woods on a hill south of Lake Wingra has been underplanted with sugar maple, basswood, and beech—trees that can grow in the shade of the oaks—and is expected to change gradually to a very shady forest with sugar maple as the dominant species. In Wingra Woods (52 acres), on the north slope of the hill, northern species such as hemlock and yellow birch were also planted so that it will resemble the sugar maple forests of northern Wisconsin. Gallistel Woods, a 28-acre plot on the south slope, will represent the southern Wisconsin type. Both forests contain ancient burial mounds, relics of an Indian culture that flourished here sometime between 600 B.C. and 1000 A.D.

Grady Dry Oak Woods

Part of the complex of southern Wisconsin fire communities—like the prairies and savannas—this woodland on the Grady Tract is dominated by oaks.

Published by the University of Wisconsin–Madison Arboretum, 1207 Seminole Highway, Madison, WI 53705

Director: Gregory D. Armstrong

Editor: Sarah Wortham

Designed by Jane Tenenbaum

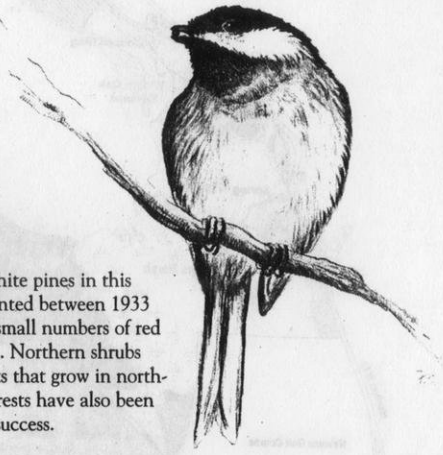
Map by Tom McClintock

Illustrations by Patrick Shea, Elisabeth deBoor, Pamela Nesbit

Printed in the United States of America.

Conifer Forests

The Arboretum's pine and boreal forests are representative of the Northwoods.

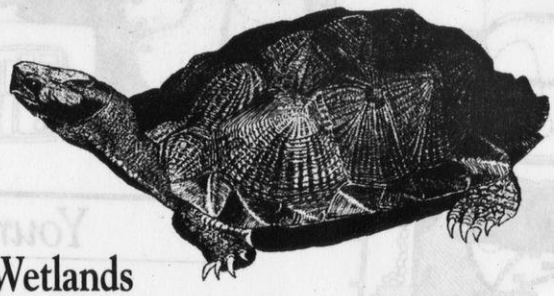


Leopold Pines

Most of the red and white pines in this 21-acre stand were planted between 1933 and 1937, along with small numbers of red maple and white birch. Northern shrubs and ground layer plants that grow in northern Wisconsin pine forests have also been planted, with limited success.

Boreal Forest

Spruce and fir plantings on 14 acres east of Curtis Prairie and in the Grady Tract south of the Beltline Highway.



Wetlands

Exceptional wildlife habitat and ideal settings for research on the restoration and management of wetlands disturbed by human activities. About 250 acres total.

Gardner Marsh

The site of a failed residential development in the early 1900s, now being used for research.

Wingra Marsh

Some of the Arboretum's least-disturbed wetlands, east of the lake.

Horticultural Collections

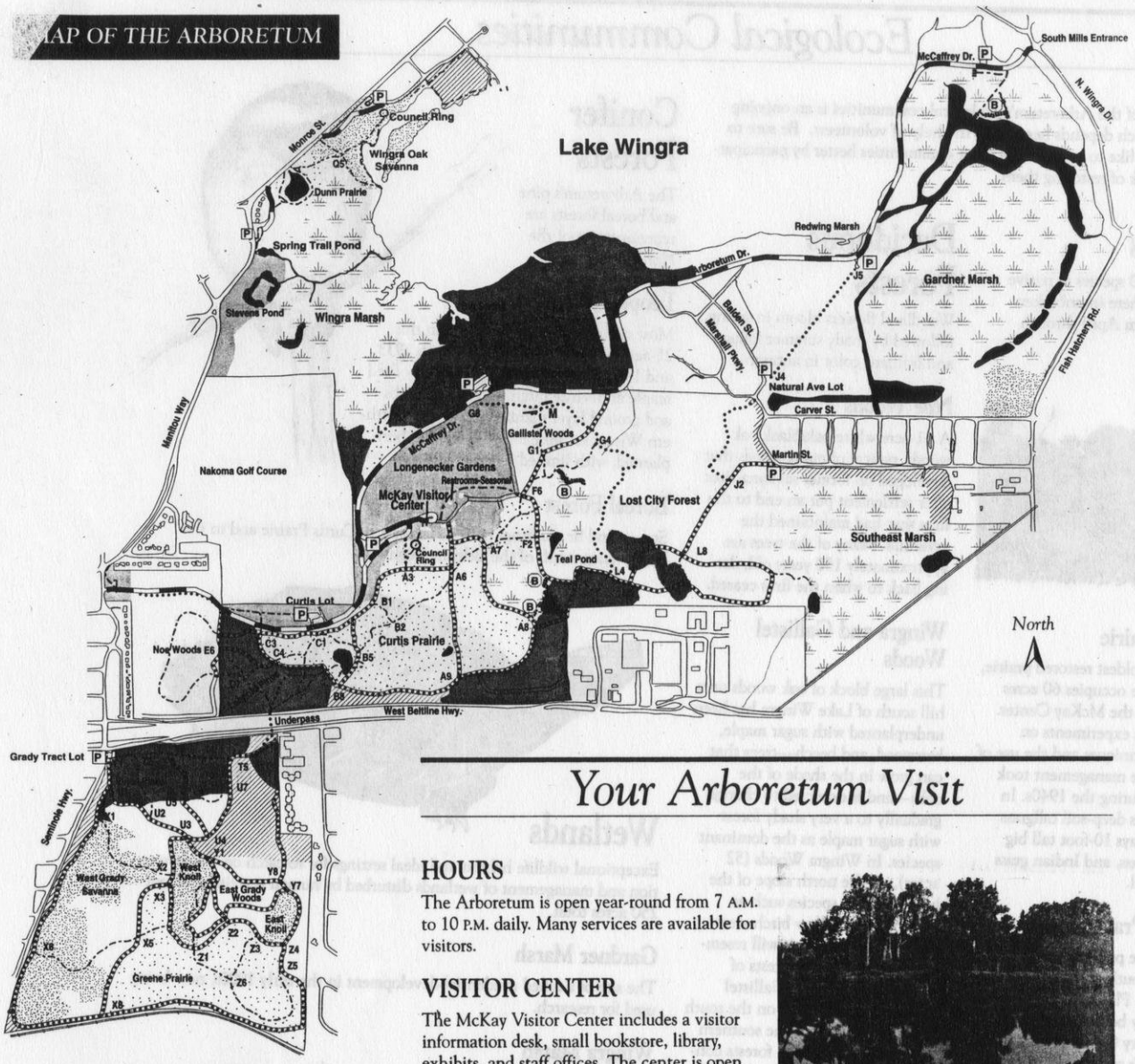
Longenecker Gardens

A traditional collection of ornamental trees and shrubs north of the McKay Center. A highlight of the 50-acre area is the outstanding collection of lilacs and flowering crabapples, which usually bloom in May. The gardens also feature an extensive collection of trees grouped by genus and a small formal shrub garden. All specimens in the gardens are labeled, usually with a tag attached to a south-facing branch.

Viburnum Garden

Just south of the intersection of Nakoma Road and Manitou Way, this garden features more than 80 species and varieties of viburnums, and 110 species and varieties of thuja (*Arbor Vitae*).

MAP OF THE ARBORETUM



LEGEND

- Arboretum & McCaffrey Dr Bicycle Routes
- Service Roads - Skiing Allowed
- Service Roads - No Skiing
- Foot Paths - Skiing Allowed
- Foot Paths - No Skiing
- Boardwalks
- Prairie
- Savanna
- Southern Forest
- Northern Forest
- Wetland
- Horticulture
- Buffer
- Water
- Parking
- Indian Mounds
- J4 J5 Trail Intersections
- Council Ring

Scale: 0, 1/4, 1/2 MILE; 0, 800, 2000 FEET

Your Arboretum Visit

HOURS

The Arboretum is open year-round from 7 A.M. to 10 P.M. daily. Many services are available for visitors.

VISITOR CENTER

The McKay Visitor Center includes a visitor information desk, small bookstore, library, exhibits, and staff offices. The center is open year-round on weekdays from 9:30 A.M. to 4 P.M. and on weekends from 12:30 to 4 P.M. (11 A.M. to 3 P.M. from June to August), excluding holidays. Please call (608) 263-7888 for more information.

PROGRAMS

Public tours and other programs take place on most weekends. Special programs for private groups are available for a nominal fee. Knowledgeable Arboretum staff members are on hand to answer questions about restoration, gardening with native plants, Wisconsin's natural history, and other subjects.

RULES AND REGULATIONS

We hope you enjoy the Arboretum's many attractions. While you are here, we ask that you please obey the following regulations. Your cooperation will help protect the Arboretum's plants and wildlife as well as research projects underway.

- Remain on trails, firelanes, or lawn areas at all times.
- Run and ski only on designated routes.
- Leave pets at home—they are prohibited on all Arboretum grounds and the road leading through it.
- Use bicycles and cars only on the paved drive.
- In-line skates, rollerskates, and rollerskis are prohibited throughout the Arboretum.
- Do not picnic, build fires, hunt, trap, or disturb animals.
- Recreational games, radios, and boom boxes are not permitted.
- Collect only memories, leaving natural materials for all to enjoy.
- Contact the McKay Visitor Center at (608) 263-7888 for more information on the Arboretum's activities or to participate in restoration efforts.

Arboretum

FOR IMMEDIATE RELEASE 5/25/95

CONTACT: Gregory D. Armstrong, (608) 262-2748

NEW EXOTIC INVADER THREATENS ARBORETUM'S WOODLAND FLORA

MADISON -- A prolific exotic plant has turned up in the University of Wisconsin-Madison Arboretum, posing a severe threat to the painstakingly restored native woodland plant communities, according to Arboretum officials.

The plant, known as garlic mustard, was introduced from Europe to the United States by gardeners more than 100 years ago.

Valued as a folk medicine and food, the plant is a fragile-looking herb with small white flowers. It was first brought to Long Island, N.Y., in 1868, but quickly spread from garden to forest, displacing many native woodland wildflowers.

"This plant poses the biggest threat to the Arboretum's forests and woodlands since they were invaded by the exotic shrubs buckthorn and honeysuckle more than 30 years ago," said Gregory D. Armstrong, director of the Arboretum. "It is very aggressive. It completely dominates the forest floor, replacing native flora and the wildlife that depend on it."

Although the plant was first seen in the Arboretum only four years ago, it has spread very rapidly, especially in areas affected by storm water channels.

The plant is prolific, producing as many as 800 seeds. A dense stand can yield 20,000 to 40,000 seeds per square meter. Seeds are dispersed naturally by an explosive seed pod but may also be spread on the fur of larger animals such as deer, and by people who may pick up seeds on their clothing and shoes.

According to Armstrong, the plant has been found in the Arboretum on both sides of the Beltline, including the Leopold and Evjue Pines, the Grady Tract, and an area known as the Duck Pond.

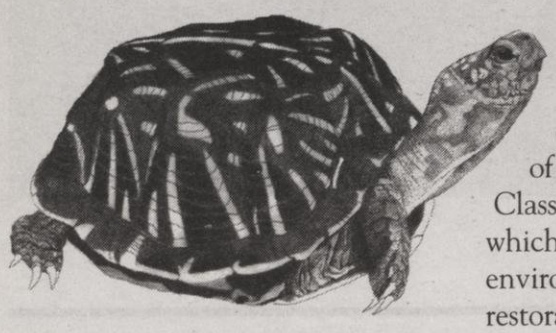
The problem is serious enough that Arboretum officials have decided to seal off affected areas and mount a concerted effort to eradicate the plant, Armstrong said.

The eradication effort means some Arboretum trails will be closed to the public and a vigorous campaign -- employing pulling, digging, fire and herbicide -- will be mounted in an effort to contain the plant and prevent its spread to other parts of the Arboretum.

The UW-Madison Arboretum is a 1,200-acre collection of restored Wisconsin plant communities. Founded in the 1930s, its purpose is to mirror in miniature the pre-settlement Wisconsin landscape.

-- Terry Devitt, (608) 262-8282

Educational Programs



The UW–Madison Arboretum offers a wide array of educational programs. Each one is designed to increase awareness of the natural world and to explore the idea that human beings can have a positive relationship with nature through the restoration of native biological communities. There are classes for adults and children, individuals and groups; most emphasize a hands-on approach to learning about nature. See pages 3–6 for a current schedule.

Public Walks

Free public walks take place each Sunday. Between September and May they usually begin at 1 P.M. From June through August they are scheduled for 8:30 A.M. Meeting locations vary according to our anticipation of good floral displays or other items of seasonal interest. We also hold an evening walk once a month; meeting times depend on the time of sunset. We occasionally schedule early morning tours for special bird-watching opportunities.

These walks will give you a basic introduction to the Arboretum, its history, and the goals of the restorations of the various plant communities here. You can expect some identification of plants and animals that you encounter during the tours as well as brief scientific explanations of various ecological concepts. If a tour is especially suitable for families, we will designate it as a family outing in the tour description.

Classes

Classes at the Arboretum offer more in-depth coverage of topics than tours provide. Classes cover the various ways in which humans interact with the environment; natural history; restoration; the arts; and opportunities for families to learn together. Many of the classes focus on ways for you to engage in restoration activities on your own property.

School Tours

School tours are designed to introduce children to the Arboretum as an outdoor teaching and research laboratory for the university. Children learn about native Wisconsin ecosystems and ways to restore them. We also have tours that emphasize special aspects of the Arboretum. Among these are tours of the Effigy Mounds, built about 1,000 years ago by the woodland culture; birding excursions in the spring; and special Earth Partnership tours for classes engaging in restorations at their schools.

Earth Partnership

Earth Partnership programs for the public include volunteer work days. These activities allow people to volunteer for restoration projects at the Arboretum and learn about the ecosystems they are helping to restore. Earth Partnership activities occur every month on a drop-in basis. Those who wish to specialize in certain restoration activities, such as propagation, are able to arrange special times for training with the staff member in charge. Other volunteers work with the Arboretum ecologist by adopting areas or plots to work on individually or in small groups with one-on-one guidance from the ecologist. Call 263-7760 for additional information on getting involved in our Earth Partnership programs.

Earth Partnership for Teachers

The Earth Partnership program for teachers is an Arboretum outreach program to train teachers to establish restoration projects on school sites and to alter their curricula to incorporate restoration in almost any subject area. This program includes a two-week workshop each summer and ongoing support from Arboretum staff to help schools with restoration planning and curriculum development.

Earth Focus Day Camp

This camp offers special outdoor, hands-on activities for children during the summer. Children explore different ecosystems in the Arboretum and learn about natural systems and how humans can have a positive relationship with nature. There are separate sessions for 6- to 7-year-old and 8- to 10-year-old children; preschool children learn together with a parent or adult friend.

Volunteering at the Arboretum

Do you enjoy spending time at the Arboretum? Would you like to learn more about the prairies, woodlands, wetlands, or woody plant collection? Do you have talents and interests to share?

Here's a chance to work in an internationally recognized research facility, meet people with similar interests, and do something positive for the environment in your own backyard!

As a volunteer you may choose to work in any area that interests you. The Arboretum offers both indoor and outdoor volunteer opportunities:

- Volunteer stewards
- Restoration projects
- Gardening in the woody plant collection
- Receptionist duties at the McKay Center
- Clerical work (data entry, mailings)
- Archival assistance
- Naturalists' assistants
- Plant propagation activities

To volunteer your services and share your knowledge and expertise, please call the volunteer program office at 263–7760.

Friends of the Arboretum Membership Application

FRIENDS OF THE ARBORETUM is an important support group that helps the UW Arboretum fulfill its mission. Membership in the Friends is a commitment to the principles and practice of restoration ecology. It is also an opportunity to join in a variety of workshops, field trips, and special events. The strength of the Friends lies in its members' willingness to support the Arboretum with their time, talents, and membership dues. Many Friends also volunteer in activities such as seed collecting and the Wingra Oak Savanna Restoration Project.

Friends of the Arboretum Membership Contribution

- ☐ Individual $25
- ☐ Family $35
- ☐ Senior/Student $20
- ☐ Supporting $50
- ☐ Business/Associate $100
- ☐ Patron $250 or more

Please make check payable to the Friends of the Arboretum, Inc., 1207 Seminole Highway, Madison, WI 53711. Your contribution is tax-deductible to the extent allowed by law.

Join us today!

Name_____

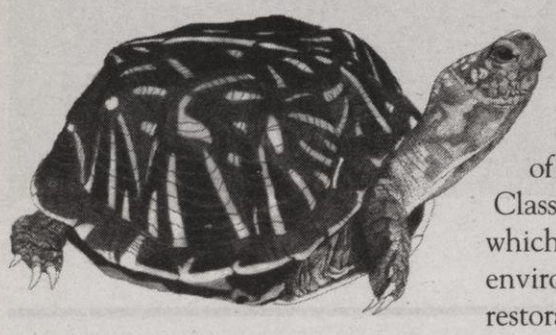
Address _____

City_____ State_____ Zip_____

I am interested in volunteering for:

- ☐ Receptionist duties at the McKay Center
- ☐ Assistance with mailings and clerical work
- ☐ Volunteer stewards
- ☐ Restoration and propagation activities
- ☐ Gardening in woody plant collection
- ☐ Newsletter—reporting, writing, artwork
- ☐ Archival work

Educational Programs



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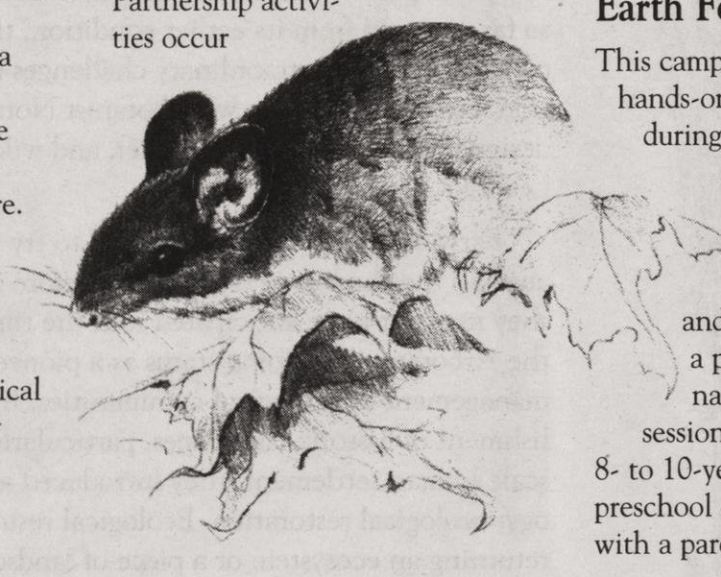
School tours are designed to introduce children to the Arboretum as an outdoor teaching and research laboratory for the university. Children learn about native Wisconsin ecosystems and ways to restore them. We also have tours that emphasize special aspects of the Arboretum. Among these are tours of the Effigy Mounds, built about 1,000 years ago by the woodland culture; birding excursions in the spring; and special Earth Partnership tours for classes engaging in restorations at their schools.

Earth Partnership

Earth Partnership programs for the public include volunteer work days. These activities allow people to volunteer for restoration projects at the Arboretum and learn about the ecosystems they are helping to restore. Earth Partnership activities occur every month on a drop-in basis. Those who wish to specialize in certain restoration activities, such as propagation, are able to arrange special times for training with the staff member in charge. Other volunteers work with the Arboretum ecologist by adopting areas or plots to work on individually or in small groups with one-on-one guidance from the ecologist. Call 263-7760 for additional information on getting involved in our Earth Partnership programs.



Earth Partnership for Teachers

The Earth Partnership program for teachers is an Arboretum outreach program to train teachers to establish restoration projects on school sites and to alter their curricula to incorporate restoration in almost any subject area. This program includes a two-week workshop each summer and ongoing support from Arboretum staff to help schools with restoration planning and curriculum development.

Earth Focus Day Camp

This camp offers special outdoor, hands-on activities for children during the summer. Children explore different ecosystems in the Arboretum and learn about natural systems and how humans can have a positive relationship with nature. There are separate sessions for 6- to 7-year-old and 8- to 10-year-old children; preschool children learn together with a parent or adult friend.

Volunteering at the Arboretum

Do you enjoy spending time at the Arboretum? Would you like to learn more about the prairies, woodlands, wetlands, or woody plant collection? Do you have talents and interests to share?

Here's a chance to work in an internationally recognized research facility, meet people with similar interests, and do something positive for the environment in your own backyard!

As a volunteer you may choose to work in any area that interests you. The Arboretum offers both indoor and outdoor volunteer opportunities:

- Volunteer stewards
- Restoration projects
- Gardening in the woody plant collection
- Receptionist duties at the McKay Center
- Clerical work (data entry, mailings)
- Archival assistance
- Naturalists' assistants
- Plant propagation activities

To volunteer your services and share your knowledge and expertise, please call the volunteer program office at 263–7760.

Friends of the Arboretum Membership Application

FRIENDS OF THE ARBORETUM is an important support group that helps the UW Arboretum fulfill its mission. Membership in the Friends is a commitment to the principles and practice of restoration ecology. It is also an opportunity to join in a variety of workshops, field trips, and special events. The strength of the Friends lies in its members' willingness to support the Arboretum with their time, talents, and membership dues. Many Friends also volunteer in activities such as seed collecting and the Wingra Oak Savanna Restoration Project.

Friends of the Arboretum Membership Contribution

- ☐ Individual $25
- ☐ Family $35
- ☐ Senior/Student $20
- ☐ Supporting $50
- ☐ Business/Associate $100
- ☐ Patron $250 or more

Please make check payable to the Friends of the Arboretum, Inc., 1207 Seminole Highway, Madison, WI 53711. Your contribution is tax-deductible to the extent allowed by law.

Join us today!

Name_____

Address _____

City_____ State_____ Zip_____

I am interested in volunteering for:

- ☐ Receptionist duties at the McKay Center
- ☐ Assistance with mailings and clerical work
- ☐ Volunteer stewards
- ☐ Restoration and propagation activities
- ☐ Gardening in woody plant collection
- ☐ Newsletter—reporting, writing, artwork
- ☐ Archival work

1996 Free Public Tours and Events

MAY

WALKING IN THE ARBORETUM: EARLY MAY

May is one of the most beautiful times in the Arboretum. Early in the month you can see a carpet of wildflowers along the trails of Wingra and Gallistel woods. The best places are near the Effigy Mounds in both woods, and the trail in Gallistel Woods that leads from the Panther Mound down to the CCC stone building. It is also a pleasant time to walk from the Effigy Mounds in Wingra Woods down toward the Big Spring. Be sure to look up now and then for the migrating warblers. The area around the springs is a particularly fine place to see many bird species.

SATURDAY, MAY 4
Night Walk. Evening is a pleasant time to see the wildflowers, catch the evening songs of birds and hear the first night sounds of frogs. Meet at McKay Center. 7–9 P.M.

SUNDAY, MAY 5
Walk Near the Dawn. A great time to hear birds both residents and migrants. Meet at McKay Center. 6:30–8 A.M.

SUNDAY, MAY 5
Woodland Walk. More wildflowers join the busy woodland display. Wood anemone, bellwort, bluebells, and trillium may be blooming. Meet at Wingra/Gallistel lot. 12–1:30 P.M.

SUNDAY, MAY 5
Tour for Families: Stories of Spring. Meet at McKay Center. 1:30–2:30 P.M.

SUNDAY, MAY 5
Public Reception to Open Photography Exhibit. Music by Wisconsin Youth Symphony members. McKay Center, 2–4 P.M.

WEDNESDAY, MAY 8
Longenecker Gardens Tour. The first of our summer tours of the gardens. Meet at McKay Center. 6:30 to 8 P.M.

SATURDAY, MAY 11
Earth Partnership for Families: Songs of the Prairie. A morning birding program for families. 6:30–8:30 A.M. Pre-register at 263-7888.

SUNDAY, MAY 12
Mothers' Day Special Short Tours. All leave from the McKay Center. 1, 2, and 3 P.M., plus a 1:30 tour for families with younger children.

WEDNESDAY, MAY 15
Evening Walk in Longenecker Gardens. Meet at McKay Center. 6:30–8 P.M.

WALKING IN THE ARBORETUM: LATE MAY

By the middle of May Greene Prairie puts on a spectacular show with acres of lupine in flower. Mixed in among the grasses are thousands of blue-eyed grass and yellow star flowers twinkling up at you. Greene Prairie was burned the first week of April this year. Burning is important for the flowering of many prairie plants because it removes the dead stems and leaves from the previous year. Many times in mid-May there are more than 40 species of plants in bloom and you can see up to 25 species of birds during a two-hour walk.

In late May, walk into Leopold Pines to see plantings of northern wildflowers. You can find them along the firelane in the middle of the woods, and along the trails marked by signposts D7 and D8.

SUNDAY, MAY 19
Prairie Spectacular! The prairies and savannas of the Grady Tract will have as many as 40 species of plants in bloom, including acres of lupine. Meet at Grady lot. 1–3 P.M.

WEDNESDAY, MAY 22
Longenecker Gardens Walk. Crabapples and/or lilacs should be at their peak. Meet at McKay Center. 6:30–8 P.M.

SUNDAY, MAY 26
Tour: Northwoods Wildflowers and West Curtis Prairie. Haven't been up north this spring? See our small restored area of wildflowers native to northern pine forests, including gaywings. Meet at west Curtis parking lot. 1–2:30 P.M.

WEDNESDAY, MAY 29
Longenecker Gardens in Late Spring. Meet at McKay Center. 6:30–8 P.M.

May is Wildflower Month at the Arboretum

We have a series of events and tours that will enable you to enjoy the restored communities and the many years of efforts made to bring native wildflowers into former farm fields.

Events this month include a photography exhibit from May 5 to June 9 with an opening reception on the 5th. The Friends of the Arboretum hold their annual plant sale on May 11 from 9 A.M. to 2 P.M. near the McKay Center.

We'll celebrate the Wingra Oak Savanna Restoration with a picnic, planting, and activities on May 19 at 2 P.M. We are fortunate to have Nina Leopold Bradley as keynote speaker. The daughter of Aldo Leopold, she is an active conservationist and inspirational speaker.

Refreshments will be provided. See the classes and tours sections for other events.

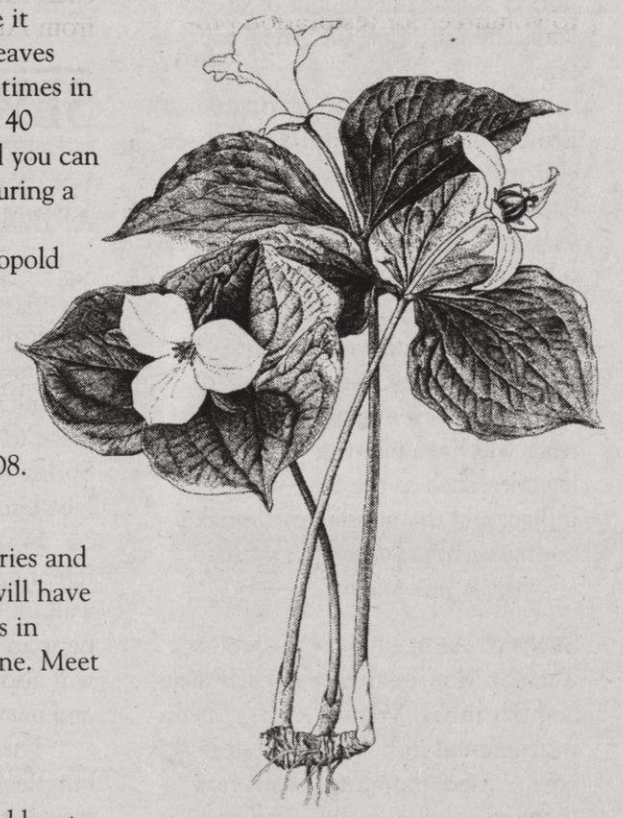
JUNE

WALKING IN THE ARBORETUM

Beginning in June, there are often too many mosquitoes to enjoy walking for long in the woodlands. Most summer tours emphasize the prairies and Longenecker Gardens. If you come at night, you might see fireflies sparkling among the grasses of the gardens and prairies. Giant silk moths emerge in the middle of the month.

But the prairies put on a show all summer. If you can come for a walk every two weeks or so, you will see a different display each time in the prairies. With more than 300 species of plants in total, there are up to 14 different species coming into bloom each week. Some are much more noticeable than others, of course.

Warm summer days are also good times to see the many butterflies and other interesting insects of the prairie ecosystem. Since Greene Prairie and east Curtis Prairie were burned in early April, they will be good places to see wildflowers this year. Central Curtis Prairie is not on the burning schedule, so as you walk in Curtis Prairie see if you can tell the difference in flowering and height of the grasses between the burned and unburned areas.



The fact that prairies are adapted to fire and benefit from an occasional burn was discovered here by John Curtis and his students in a series of experiments during the 1940s as they tried to understand how to restore a prairie on this former farmland. Curtis Prairie is the first attempt by humans to restore a prairie, as far as we know, and has been the site of many significant scientific studies that have led to greater knowledge about prairies and prairie restoration.

SUNDAY, JUNE 2
Prairie in Pastel Colors: Tour of Greene Prairie. Tiny flowers of yellow star grass, pale blue-eyed grass and pink phlox dominate the prairie now. Meet at Grady lot. 8:30–10:30 A.M.

WEDNESDAY, JUNE 5
Evening Walk in Longenecker Gardens. Meet at McKay Center. 6:30–8 P.M.

SUNDAY, JUNE 9
Curtis Prairie Tour. This is the time that the prairie baptisia (false indigo) can be spectacular. Compare the burned and unburned areas of the prairie to see the influence of fire on the prairie. Meet at McKay Center. 8:30–10 A.M.

WEDNESDAY, JUNE 12
Evening Walk in Longenecker Gardens. Meet at McKay Center. 6:30–8 P.M.

SATURDAY, JUNE 15
Wait Until Dark Night Walk. Rather than walking under the full moon, which was on June 1, tonight we want to avoid the moonlight so we can attract the giant moths of June and other insects to lights. Meet at McKay Center. 8–10 P.M.

SUNDAY, JUNE 16
Tour of the Monroe Street Prairie, Savanna, and Wetlands. There is much cultural and historical history in this small portion of the grounds with Native American habitation going back at least 4,000 years and early pioneer life centered around the springs. Meet at Spring Trail Pond lot. 8:30–10:30 A.M.

WEDNESDAY, JUNE 19
Evening Walk in Longenecker Gardens. This is a good time to see shrubs or trees of interest for the home landscape. Meet at McKay Center. 6:30–8 P.M.

SUNDAY, JUNE 23
Tour of Greene Prairie. One feature of the prairie is that its flowering plants must hold their flowers higher and higher as the season progresses and the plants grow taller. Today we will see flowers much taller than those in the early spring. Meet at Grady lot. 8:30–10:30 A.M.

WEDNESDAY, JUNE 26
Evening Walk in Longenecker Gardens. These gardens are not only beautiful but full of experiments on the suitability of woody plants for the Wisconsin climate. Meet at McKay Center. 6:30–8 P.M.

SATURDAY, JUNE 29
Once in a Blue Moon Night Walk. Learn the meaning of this phrase and other night lore as you enjoy a summer evening walking Arboretum trails with our naturalists. Meet at McKay Center. 8–10 P.M.

SUNDAY, JUNE 30
Tour of Greene Prairie. Visit this spectacular restored prairie to see the success of Henry Greene and current problems caused by new urbanization. Meet at Grady lot. 8:30–10:30 A.M.

JULY

WALKING IN THE ARBORETUM

During July many people like to walk the prairies to enjoy "A Prairie Birthday," inspired by an essay of the same name by Aldo Leopold in *A Sand County Almanac*. The essay is a very moving testament for preservation of native species. It also points out the pleasure and educational nature of keeping a journal recording the timing of natural events from year to year, such as when the first flower of a species occurs.

The silphiums bloom in July. We have four species in the Arboretum. The compass plant with coarsely divided leaves is naturally found west of Dane County. The prairie dock, with its large "elephant-ear" leaves once grew mostly east of Dane County. The other two species are cup plant and rosin weed. You will notice their sunflower-like flowers throughout Curtis and Greene Prairies.

SUNDAY, JULY 7
Tour of Curtis Prairie. "A Prairie Birthday" is a famous essay in Aldo Leopold's *A Sand County Almanac*. We will see the compass plant he wrote about, as well as other July bloomers, in this oldest of restored prairies. Meet at McKay Center. 8:30–10 A.M.

WEDNESDAY, JULY 10
Evening Walk in the Gardens. Learn about shrubs and trees appropriate to the home landscape. Meet at McKay Center. 7–8:30 P.M.

SATURDAY, JULY 13
Night Walk. This is an opportunity to see midsummer flowers on the prairies as well as learn about the many insects in this habitat that make night music. Meet at McKay Center. 8–10 P.M.

SUNDAY, JULY 14
Tour of the Grady Tract and Greene Prairie. Visit the Grady savanna restorations and Greene Prairie, one of the finest prairie restorations in the state. There may be up to 40 species flowering during this midsummer visit, particularly since these areas were burned in early spring. Meet at Grady Tract lot. 8:30–10:30 A.M.

WEDNESDAY, JULY 17
Evening Walk in the Gardens. Meet at McKay Center. 7–8:30 P.M.

SUNDAY, JULY 21.
Tour of Curtis Prairie. This is a good time of year to see how the different burn-management techniques affect the flowering and weed problems on the prairie. It is also a time of lavenders and yellows as the bee balm and yellow coneflowers take their turn in the blooming sequence. Meet at McKay Center. 8:30–10 A.M.

WEDNESDAY, JULY 24
Evening Walk in the Gardens. Meet at McKay Center. 7–8:30 P.M.

SUNDAY, JULY 28.
Tour of the Grady Tract and Greene Prairie. Depending on how the season has been, this could be a time for a spectacular display of yellow and lavender flowers as the sunflower and silphium families are joined by the blazing stars. Meet at Grady Tract lot. 8:30–10:30 A.M.

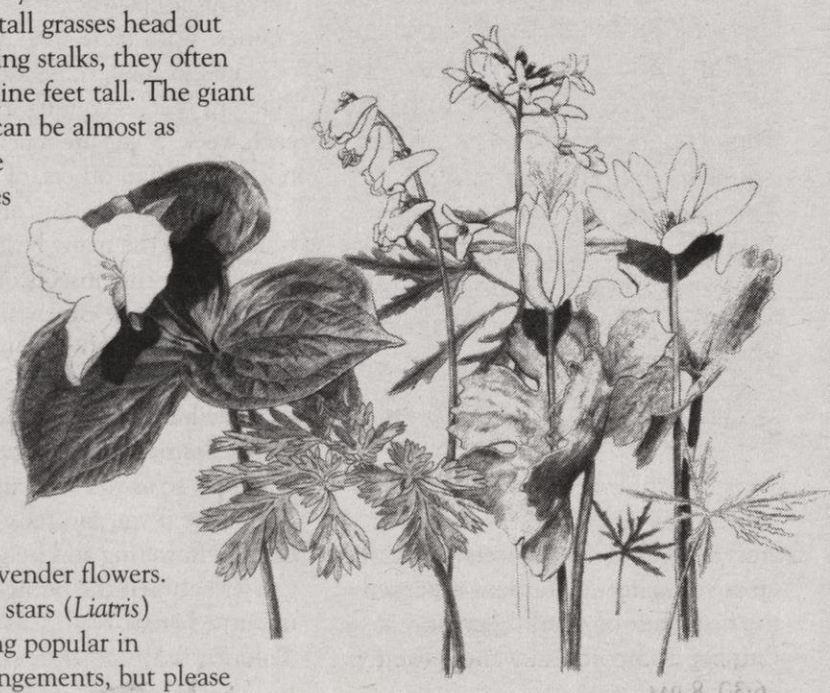
WEDNESDAY, JULY 31
Evening Walk in the Gardens. This will be the last of our summer walks in the gardens. Meet at McKay Center. 7–8:30 P.M.

AUGUST

WALKING IN THE ARBORETUM

August is a special month on the prairies—the time when you can best begin to understand how the pioneers felt when they first encountered this vast ecosystem.

As the tall grasses head out with flowering stalks, they often grow over nine feet tall. The giant sunflowers can be almost as tall, and the other species are in the four- to five-foot range as they shout for attention from the pollinators with their bright yellow or lavender flowers. The blazing stars (*Liatris*) are becoming popular in florists' arrangements, but please leave the ones here for others to enjoy.



An interesting trail during August is the long angled trail that traverses Curtis Prairie. It was the trail the CCC boys took as they planted and watered this restoration in the 1930s. It is a very narrow trail that can give you that feeling of what the pioneers experienced. The western part of Curtis, near the Curtis parking lot, also has narrow angular trails. These trails will have many of the prairie legumes, such as the false white indigo, and the unusual rattlesnake master with its yucca-like leaves (*Eryngium yuccifolium*).

SUNDAY, AUGUST 4
Tour of Monroe Street Area Prairie and Savannas. Volunteers have been instrumental in helping to restore this area of the Arboretum. Learn how they are helping in this vital work. Marion Dunn Prairie is named for a wonderful volunteer who helped us in this area. Meet at the parking lot on the corner of Monroe St. and Arbor Dr. 8:30–10:30 A.M.

SATURDAY, AUGUST 10
New Moon Walk. After the sun sets this will be a real walk in the dark. It is a time to see underwing moths and hear the late summer crickets. Meet at McKay Center. 7:30– 9:30 P.M.

SUNDAY, AUGUST 11
Curtis Prairie Tour. Visit the prairie as it reaches its full glory of bloom and height. Experience how the pioneers felt as they crossed the uncharted sea of grass that was the midwestern tallgrass prairie. Meet at McKay Center. 8:30–10 A.M.

SUNDAY, AUGUST 18
Tour of the Grady Savannas and Greene Prairie. Does prairie dropseed really smell like buttered popcorn when it is in bloom? Why do the grasses have such beautiful tiny flowers if they are wind-pollinated? Meet at Grady Tract lot. 8:30–10:30 A.M.

SUNDAY, AUGUST 25
Curtis Prairie Tour. As we alternate visiting the prairies all summer you can see the remarkable changes in blooming species in just two weeks' time. Meet at McKay Center. 8:30–10 A.M.

SEPTEMBER

WALKING IN THE ARBORETUM

September is the greatest time for migration of warblers and other passerines. The colors of many warblers has changed and they are quiet, making them hard to identify. A good place to look for them is by the Big Spring in Wingra Woods, or by Ho Nee Um Pond.

In the prairies, look for the different gentians. It is a nice time to walk in Greene Prairie or in the remnant area of east Curtis Prairie. You will also see sunflowers, goldenrods and many asters.

This is the beginning of intense but pleasant work for prairie restorationists as it is time to gather many seeds that are maturing. Seeds from the Arboretum are only collected by those with permits. They have been used to start many prairies in parks around the area.

TOURS

SUNDAY, SEPTEMBER 1
Tour of Some Arboretum Ponds. Teal Pond is very natural-looking even though it is a restoration effort. We have had to add many ponds to Arboretum property since 1935 as the city grew up around us. Find out why these ponds are important to the entire city. Meet at McKay Center. 1–3 P.M.

SUNDAY, SEPTEMBER 8
Voices of the Past. Learn about the cultural history of the Arboretum from 4,000 years ago to the present. Our naturalist will use stories and writings to give you a feeling for the lives of people who lived here before. Meet at Wingra/ Gallistel lot. 1–3 P.M.

SUNDAY, SEPTEMBER 15
Fall Bird Walk. Meet for a morning walk to observe migrating birds, including the confusing fall warblers and other neotropical migrants. Begin at McKay Center. 7–9 A.M.

SATURDAY, SEPTEMBER 21
Night Walk. This walk will be under the harvest moon. We probably won't sing old songs about it, but it is a good time to observe the last insects of the season, if we have not had a killing frost, and the fall migration of birds. Meet at McKay Center. 6:30–8:30 P.M.

SUNDAY, SEPTEMBER 22
Tour of Greene Prairie. Gentians, asters and the last goldenrods mingle their lavender and yellow hues with the red and gold tinges of the native grasses. Did you know the prairie grasses have fall colors as brilliant as the famous fall foliage of the trees? Meet at the Grady Tract lot. 1–3 P.M.

SUNDAY, SEPTEMBER 29
Fall Sampler Tour. The Arboretum is famous for its restored prairie and woodland communities. Enjoy the colors of these communities that made southern Wisconsin "one of the most exquisitely beautiful regions I have ever seen in any part of the world," according to George Featherstonehaugh, an Englishman traveling here in 1835. Meet at McKay Center. 1–2:30 P.M.

OCTOBER

WALKING IN THE ARBORETUM

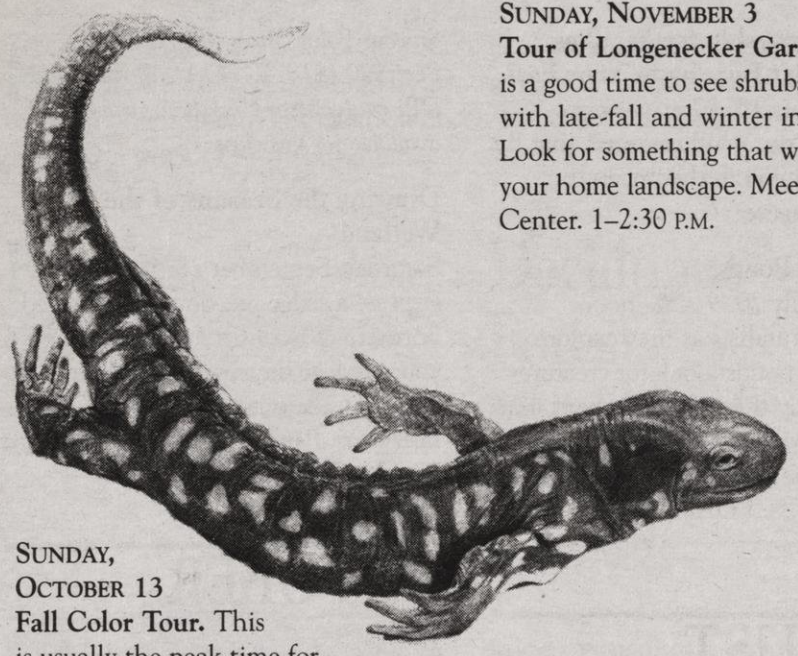
The great event this month is the climax and conclusion of the parade of fall colors that began in late August. Typically, this peaks about mid-month with the brilliant red, orange and yellow of the sugar maple. A walk in Gallistel or Wingra woods is especially pleasant now.

A special place is by the Effigy Mounds in Wingra Woods where you can look downhill toward the lake and see the layers of color.
In the prairies, the asters offer the final burst of color and the last bit of nectar for the butterflies that migrate or overwinter as adults. Look for the departing monarchs and the red admiral, mourning cloaks, and comma butterflies as they prepare to hide for the winter. In the gardens you may see flocks of bluebirds, robins, and other thrushes eating berries.

TOURS

SUNDAY, OCTOBER 6
Fall Color Tour. View the forest and prairie in their autumn splendor. If there has been enough rain, we might find some unusual fungus, too. It is also a good time to see flocks of

cedar waxwings, juncos, robins, and other birds feasting on bountiful berries. Meet at McKay Center. 1–2:30 P.M.



SUNDAY, OCTOBER 13
Fall Color Tour. This is usually the peak time for fall color in the foliage of our native trees. The yellows of the sugar maples planted in Wingra and Gallistel woods 30 to 50 years ago are starting to give the feel of a true maple woods. Enjoy the sights, smells and sounds of autumn. Meet at Wingra/ Gallistel lot. 1–2:30 P.M.

SATURDAY, OCTOBER 19
Night Walk. This full moon was called the "moon of the falling leaves" by some native American groups. What would your name for it be? Enjoy an autumn evening in the relative quiet of the Arboretum. Meet at McKay Center. 6–7:30 P.M.

SUNDAY, OCTOBER 20
Walk with Leopold. Aldo Leopold was one of the founders of the Arboretum. His poetic prose leads us to different sites to "find some undiscovered place under everybody's nose," at the Arboretum. Meet a naturalist who will read from Leopold's writings at the McKay Center. 1–2:30 P.M.

NOVEMBER

WALKING IN THE ARBORETUM

Look for winter residents and winter visitors among the bird life in the woodlands. Red-breasted nuthatches, golden-crowned kinglets, brown creepers, juncos, tree sparrows, and siskins have arrived from farther north. Year-round residents like the blue-jays, white-breasted nuthatches, chickadees, and woodpeckers can be found throughout the woodlands.

Aldo Leopold said, "The wind that makes music in November corn is in a hurry." November can be a time of changeable weather brought by the winds and Arctic air masses. In Wisconsin these changes are best remembered by the Armistice Day storm that trapped many hunters dressed for mild weather and for great storms on the Great Lakes including the one that took the *Edmund Fitzgerald*.

If a mild "Indian summer" day occurs after the killing frosts, enjoy it by walking along the shoreline trail of Lake Wingra where there will be birds enjoying the springs. Walk east from the big spring to the path among the hemlocks and yellow birch to enjoy their contrasting colors and textures.

TOURS

SUNDAY, NOVEMBER 3
Tour of Longenecker Gardens. This is a good time to see shrubs and trees with late-fall and winter interest. Look for something that will enhance your home landscape. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, NOVEMBER 10
Tour of the Monroe Street Environs. We will visit the historical natural landscapes designed by William Longenecker and Jens Jensen and the restorations of savanna and prairie. Meet at Spring Trail Pond parking lot. 1–3 P.M.

SATURDAY, NOVEMBER 16
Night Walk. Some native Americans called this the "moon when deer drop their antlers." When male deer no longer need antlers to prove their worthiness for mating, they drop them. The antlers are quickly recycled for their minerals by mice and other small mammals. We won't find antlers but it is an interesting time of year for a quiet walk. Meet at McKay Center. 6:30–8 P.M.

SUNDAY, NOVEMBER 17
Thinking Like an Arboretum. In 1975 Orie Loucks posed the question of whether we could learn to "think like an Arboretum and support efforts to maintain integrity in its biotic communities." This tour explores the ecological and humanistic aspects of that question within the Arboretum's gardens, woodlands, and prairies. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, NOVEMBER 24
Geology of the Arboretum. Learn about the Arboretum's geological history on the edge of the glacier. Meet at McKay Center for a slide presentation, followed by a hike. 1–3 P.M.

DECEMBER

WALKING IN THE ARBORETUM

Get away from the hustle and bustle of this time of year with a quiet walk at the Arboretum. Visit the reception area of the McKay Visitor Center for a cup of hot chocolate after your hike or ski trip. Tours will occur even if weather is bad.

If you dress properly you can enjoy a hike and pleasant surprises along the trails or in the gardens. Since evening comes early you might encounter the crepuscular animals such as whitetail deer. If there is snowfall, look for tracks of raccoon, fox, and mink. A good spot to see tracks is near Teal Pond. In the conifers around the pond you can look for pine siskins, crossbills, and purple finches.

It is even a time for a sign of spring. The hooting of the great horned owl means it's mating time. The owls will lay eggs in January. Please do not use artificial means to call to them. We don't want them to think that some other owl has nested here.

Longenecker Gardens will still have a colorful display of fruit in the crabapple collection, and robins and cedar waxwings can be found feasting there.

SUNDAY, DECEMBER 1
Winter Birds. It's surprising how many very small birds stay here all winter long. Learn how they do it and what you can do to observe and even help them with your home landscape. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, DECEMBER 8
Conifer Tour. Learn characteristics of the conifers of Longenecker Gardens and a few of the Arboretum's restored communities at a time of the year when they are truly evergreen. Meet at McKay Center. 1–3 P.M.

SUNDAY, DECEMBER 15
Preparing for Winter. This tour will explore the changes plants and animals undergo in preparing themselves for the cold and snow. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, DECEMBER 22
In the Bleak Mid-winter. The winter solstice was of great importance to people until recent times. Many of us today wouldn't notice it if the weather forecasters didn't tell us about it. It is part of the knowledge that we have lost in modern times. Come rediscover the particular beauty of this time of year, the quality of the diminished light, and the joy of knowing that the days are getting longer again. Meet at McKay Center. 1–2:30 P.M.

SUNDAY, DECEMBER 29
Snow. Whether we have it or not, we will talk about snow—its characteristics, what it means for plant and animal life, and how it affects what plant communities thrive in this area. Meet at McKay Center. 1–2:30 P.M.

TUESDAY DECEMBER 31
Second Annual New Year's Eve Walk. Last year's walk was so successful, we thought we'd offer it again. Join us for a quiet evening at the Arboretum before you go off to noisier pursuits or the warmth of your home. There is no finer ceiling for a gentle farewell to 1996 than the stars or clouds overhead. Meet at McKay Center. 6:30–8 P.M.

PLEASE HELP US!

We would like to know whether you find this guide useful. Please answer the questions below, and you will have your name entered in a drawing. We will give away many items (maps, notecards, guidebooks), so you will have more than one opportunity to win a thank-you gift!

Please mail this form to: UW Arboretum, 1207 Seminole Highway, Madison, WI 53711. Attention: Donna Thomas. Or, leave it at the McKay Visitor Center during public hours (Mon.–Fri. 9 A.M. to 4 P.M.; Sat.–Sun. 12:30 to 4:30 P.M. through May 31 and 11 A.M. to 3 P.M. June through August). Thank you!

First name_____ Daytime telephone number _____
(to be called only if name is drawn for gift)

How often do you visit the Arboretum?
Daily ____ 1 or 2 times/week ____ 1 or 2 times/month ____
A few times each year ____ This is my first visit ____

Have you been to the Arboretum's McKay Visitor Center? yes____ no____

Are you a member of the Friends of the Arboretum? yes____ no____

Did this guide provide you with information about the Arboretum that you did not know before? yes____ no____

If yes, what information was new to you? _____

Did you . . .
Use the map? yes____ no____
Read the classes/tours information? yes____ no____
Keep the guide after your visit? yes____ no____
Other things you would like to see included in the guide: _____
_____

Comments: _____
_____

1996 Classes

Classes meet at the McKay Center unless otherwise indicated. Please note that pre-registration is requested for some classes. To pre-register, call 263-7888. Many classes are free. Friends of the Arboretum receive a discount on all Arboretum classes. To join FOA, see the form on page 2 of this guide or call 263-7760.

MAY

Introduction to Spring Wildflowers
Saturday, May 4. 1 P.M.–3 P.M. Learn identification and ecology of woodland wildflowers at the height of their splendor.
Instructor: Jobelle Shands, naturalist
Fee: $9.50 ($8 FOA)

Drawing the Seasons of the Wetland
Saturday, May 18. 1–3 P.M.
Explore a sedge meadow and restored northern Wisconsin wetland. Bring your drawing materials and prepare to be outside.
Instructor: Pamela Nesbit, artist
Fee: $9.50 ($8 FOA)

All About American Indian Cultures in the Arboretum
Saturday, May 25. 1–3 P.M.
Native Americans occupied what is now the Arboretum as long as 4,000 years ago. Learn about their various cultures through the centuries, including the Effigy Mound Builders.
Fee: $3 ($2.50 FOA)

Earth Focus Day Camp for Children begins in June and runs through August.
See separate flyer for details or call 263-7888.

JUNE

All About Songsters of Greene Prairie
Saturday, June 1. 7:30–9:30 A.M.
Who is that singing in the grass? Learn about the birds who nest in grasslands such as Greene Prairie. Meet at Grady Tract parking lot.
Instructor: Sylvia Marek, naturalist
Fee: $9.50 ($8 FOA)

Earth Partnership for Families: Bison! Giants of the Grasslands.
Saturday, June 8. 1–3 P.M.
Twenty to forty million bison once roamed the prairies of the Midwest. Learn about this magnificent beast and how native Americans depended upon it for food, clothing, and shelter. Musical instruments and toys came from bison, too!
Please pre-register.

Attracting and Trapping Night Insects
Friday, June 14. 8:30–11:30 P.M.
Explore the ways of night insects by luring and catching them for rearing and further study.
Instructor: Mark Evans, entomologist
Fee: $3 ($2.50 FOA)

JULY

Annual Butterfly Count
Sunday, July 7. 9 A.M. This will be the seventh annual butterfly count at the Arboretum. In the past we have seen as many as 28 different species and a total of 233 individuals. Some species include the red-spotted purple, viceroy, spring azure, Aphrodite fritillary, Edwards hairstreak—enchanting names for beautiful "flying flowers." Join in this important monitoring of butterfly health.
Instructor: Karl Legler
Call 255-BIRM for last-minute info.

Earth Partnership for Families: What's That Buzzing in Your Ear?
Saturday, July 13. 10 A.M.–noon.
Investigate the small creatures that fly, crawl, and jump in the prairie.
Please pre-register.

All About Ponds
Saturday, July 20. 9 A.M.–noon.
Join our naturalists as they explore Arboretum ponds. Look for creatures that make up the rich food chain in a pond. We will also use lenses to see the small members of the food chain.
Fee: $3 ($2.50 FOA)
Please pre-register.

AUGUST

All About Weavers and Wanderers of the Prairie
Saturday, August 17. 10 A.M.–noon.
Come and discover the magic of the wandering monarch butterflies and the amazing orb-weaving spiders. An introduction to the diversity of the prairie and the variety of flowers and the residents that use them to survive.
Instructor: Sylvia Marek
Fee: $3 per person ($2.50 FOA)
Please pre-register.

Earth Partnership for Families: Prairie Flowers
Sunday, August 18. 2–4 P.M.
An August prairie is like a living painting. Jump into a prairie painting and become a nature detective in search of patterns, shapes, and colors. Each family will take home an artistic impression of the prairie.
Please pre-register.

SEPTEMBER

Fall Wildflowers
Saturday, September 14. 1–3 P.M.
Introduction to the identification and ecology of prairie and woodland wildflowers. Find out why the prairie could be called daisyland. Learn the truth about goldenrods. Meet at Grady Tract parking lot.
Instructor: Jobelle Shands, naturalist
Fee: $9.50 ($8 FOA)

Earth Partnership for Families: Time Machine
Saturday, September 14. 1–3 P.M.
Take a journey through time to learn about Wisconsin rocks and soils. Travel through the ages to see an ancient ocean. Imagine climbing a glacier to see a mighty mammoth. Discover how the water and ice shaped our land and formed the foundation for our soils.
Please pre-register.

Introduction to Grass Taxonomy
Friday, September 20, 12:30–5:30 P.M. and Saturday, September 21, 9 A.M.–5 P.M. This two-day workshop is an introduction to the grasses of the upper Midwest, including structures, terms, evolution and classification, identification of common grasses, and their ecology.
Instructor: Dr. Robert Freckman, UW–Stevens Point Biology Dept.
Fee: $20 ($18.50 FOA)—for both days
DPI equivalency clock hours may be available for this class

Drawing the Seasons of the Wetland
Saturday, September 28. 1–3 P.M.
Explore a sedge meadow and restored northern Wisconsin wetland. Bring your favorite drawing materials and prepare to be outside.
Instructor: Pamela Nesbit, artist
Fee: $9.50 ($8 FOA)

OCTOBER

Our Friend the Soil: A Soil-Introduction for All Ages
Saturday, October 5. 9–11:30 A.M.
Let's take a walk—mindful of the soil on which we tread. The soil is a hidden "root domain" of darkness and silence; we may feel excluded from it. We are creatures of the "leaf domain," regularly flooded with sunlight.

Begin with an hour of soil talk in the McKay Center and enjoy images brought back to us from "soil space" by soil explorers, poets, and scientists. Then we will walk outside together, and perhaps sing some soil songs and have a soil meditation. We will use a soil probe to bring up soil "pedopsies" and converse with the soil.
Instructor: Dr. Francis Hole, UW Soil Science Dept.
Fee: $3 ($2.50 FOA)

Seed Collecting
Saturday, October 12. 1–3 P.M.
Learn about basic seed collection and handling techniques for use in personal restoration projects.
Instructor: Kristin Scheele, Arboretum naturalist
Fee: $9.50 ($8 FOA)

NOVEMBER

Winter Botany
Saturday, November 2. 1–3 P.M.
We'll learn to identify trees and shrubs after leaf-fall, making use of keys to field characteristics. Bring a hand lens if you have one; we will have some available here.
Instructor: Dr. John W. Thomson, UW Botany Dept. Emeritus
Fee: $9.50 ($8 FOA)

Remembering Laura Ingalls Wilder
Saturday, November 2. 10 A.M.–noon. What was it like to attend a one-room school house on the vast prairie? To find out, come to the Arboretum and visit a "pioneer school." Take a walk and learn about the prairie through Laura's experiences.
Fee: $3 ($2.50 FOA)

Propagating Ferns
Saturday, November 9. 10 A.M.–noon. Learn to raise ferns from spores, and take a few home in time to harden up before spring planting.
Instructor: Tim Kessenich, DNR
Fee: $9.50 ($8 FOA)

CLASS REGISTRATION

Mail this form, with checks payable to "UW-Madison Arboretum," to: Classes, UW Arboretum, 1207 Seminole Hwy., Madison WI 53711. If you are registering for more than one class, please send separate checks for each one so that we can refund your money if a class is full. Space cannot be held without an accompanying fee. Fees will be refunded only if a class is filled or canceled due to low enrollment. Confirmation and directions are sent upon receipt of fee. Please call 263-7888 if you have questions.

Name _____

Address _____

City / State / Zip _____

Please list the programs for which you are registering. Enclose separate checks for each program. _____

_____

Please fill out form on reverse side.

Ecological Communities

Restoration of the Arboretum's ecological communities is an ongoing effort, which depends heavily on the help of volunteers. Be sure to tell us if you'd like to get to know these communities better by participating in the work of restoring them.

Prairies

More than 300 species of native plants flower here in unbroken succession from April through October.

Curtis Prairie

The world's oldest restored prairie, Curtis Prairie occupies 60 acres just south of the McKay Center. Many classic experiments on planting techniques and the use of fire in prairie management took place here during the 1940s. In early fall this deep-soil tallgrass prairie displays 10-foot tall big bluestem grass, and Indian grass nearly as tall.

Greene Prairie

This 50-acre prairie restoration lies along the southern boundary of the Arboretum. Planted nearly single-handedly by botanist and prairie expert Henry Greene, this is the Arboretum's most successful replica of native prairie. The prairie wildflowers are especially showy against the background of shorter prairie grasses, including little bluestem and prairie dropseed.

Wingra Oak Savanna

Oak savannas are groves of open-grown oaks in a grassland setting. Though they are now very rare, they were once widespread in southern Wisconsin. At this site, the Arboretum is restoring a grove of magnificent open-grown bur oaks by removing the current understory of weeds and non-native trees and shrubs and replacing them with species thought to have grown in the original savannas. A special relationship with the Dudgeon-Monroe Neighborhood Association has led to an active group of volunteers joining this coordinated restoration effort near Green Prairie.

Deciduous Forests

Woodland flowers bloom in spring, followed by shady summer foliage and brilliant color in autumn.

Noe Woods

A 41-acre white oak/black oak woods, typical of many woods that developed on former savanna sites after settlement put an end to the fires that had maintained the savannas. Many of the trees are approximately 150 years old, dating back to when the fires ceased.

Wingra and Gallistel Woods

This large block of oak woods on a hill south of Lake Wingra has been underplanted with sugar maple, basswood, and beech—trees that can grow in the shade of the oaks—and is expected to change gradually to a very shady forest with sugar maple as the dominant species. In Wingra Woods (52 acres), on the north slope of the hill, northern species such as hemlock and yellow birch were also planted so that it will resemble the sugar maple forests of northern Wisconsin. Gallistel Woods, a 28-acre plot on the south slope, will represent the southern Wisconsin type. Both forests contain ancient burial mounds, relics of an Indian culture that flourished here sometime between 600 B.C. and 1000 A.D.

Grady Dry Oak Woods

Part of the complex of southern Wisconsin fire communities—like the prairies and savannas—this woodland on the Grady Tract is dominated by oaks.

Published by the University of Wisconsin–Madison Arboretum, 1207 Seminole Highway, Madison, WI 53705

Director: Gregory D. Armstrong

Editor: Sarah Wortham

Designed by Jane Tenenbaum

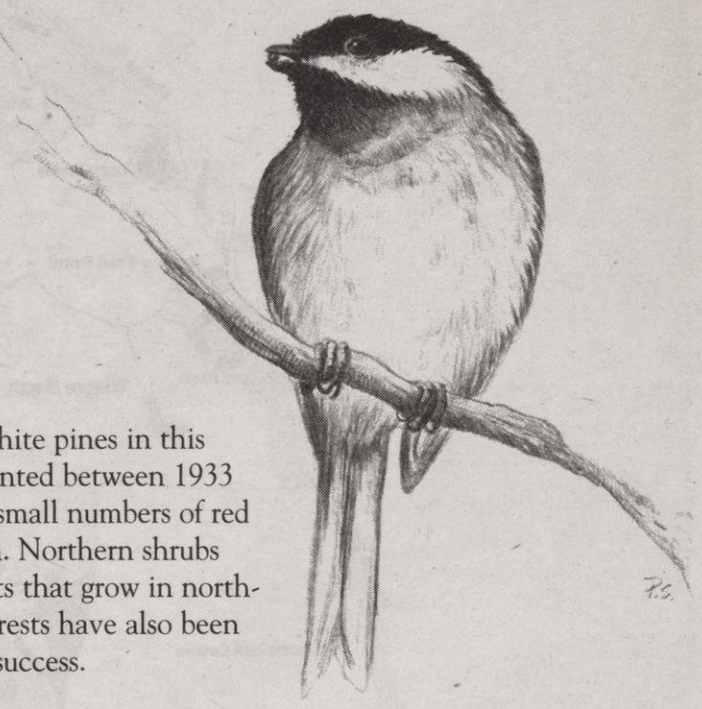
Map by Tom McClintock

Illustrations by Patrick Shea, Elisabeth deBoor, Pamela Nesbit

Printed in the United States of America.

Conifer Forests

The Arboretum's pine and boreal forests are representative of the Northwoods.

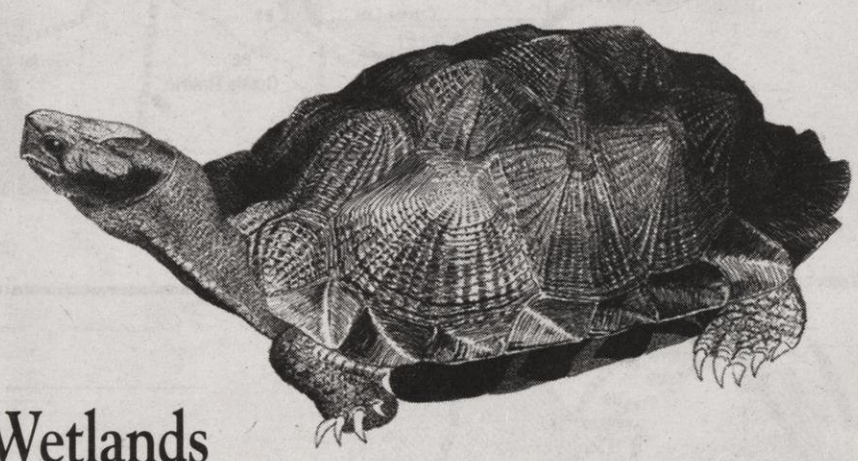


Leopold Pines

Most of the red and white pines in this 21-acre stand were planted between 1933 and 1937, along with small numbers of red maple and white birch. Northern shrubs and ground layer plants that grow in northern Wisconsin pine forests have also been planted, with limited success.

Boreal Forest

Spruce and fir plantings on 14 acres east of Curtis Prairie and in the Grady Tract south of the Beltline Highway.



Wetlands

Exceptional wildlife habitat and ideal settings for research on the restoration and management of wetlands disturbed by human activities. About 250 acres total.

Gardner Marsh

The site of a failed residential development in the early 1900s, now being used for research.

Wingra Marsh

Some of the Arboretum's least-disturbed wetlands, east of the lake.

Horticultural Collections

Longenecker Gardens

A traditional collection of ornamental trees and shrubs north of the McKay Center. A highlight of the 50-acre area is the outstanding collection of lilacs and flowering crabapples, which usually bloom in May. The gardens also feature an extensive collection of trees grouped by genus and a small formal shrub garden. All specimens in the gardens are labeled, usually with a tag attached to a south-facing branch.

Viburnum Garden

Just south of the intersection of Nakoma Road and Manitou Way, this garden features more than 80 species and varieties of viburnums, and 110 species and varieties of thuja (*Arbor Vitae*).

MAP OF THE ARBORETUM

LEGEND

- Arboretum & McCaffrey Dr Bicycle Routes
- Service Roads - Skiing Allowed
- Service Roads - No Skiing
- Foot Paths - Skiing Allowed
- Foot Paths - No Skiing
- Boardwalks
- Prairie
- Savanna
- Southern Forest
- Northern Forest
- Wetland
- Horticulture
- Buffer
- Water
- Parking
- M Indian Mounds
- J4 J5 Trail Intersections
- Council Ring

0 1/4 1/2 MILE

0 800 2000 FEET

Scale

Your Arboretum Visit

HOURS

The Arboretum is open year-round from 7 A.M. to 10 P.M. daily. Many services are available for visitors.

VISITOR CENTER

The McKay Visitor Center includes a visitor information desk, small bookstore, library, exhibits, and staff offices. The center is open year-round on weekdays from 9:30 A.M. to 4 P.M. and on weekends from 12:30 to 4 P.M. (11 A.M. to 3 P.M. from June to August), excluding holidays. Please call (608) 263-7888 for more information.

PROGRAMS

Public tours and other programs take place on most weekends. Special programs for private groups are available for a nominal fee. Knowledgeable Arboretum staff members are on hand to answer questions about restoration, gardening with native plants, Wisconsin's natural history, and other subjects.

RULES AND REGULATIONS

We hope you enjoy the Arboretum's many attractions. While you are here, we ask that you please obey the following regulations. Your cooperation will help protect the Arboretum's plants and wildlife as well as research projects underway.

- Remain on trails, firelanes, or lawn areas at all times.
- Run and ski only on designated routes.
- Leave pets at home—they are prohibited on all Arboretum grounds and the road leading through it.
- Use bicycles and cars only on the paved drive.
- In-line skates, rollerskates, and rollerskis are prohibited throughout the Arboretum.
- Do not picnic, build fires, hunt, trap, or disturb animals.
- Recreational games, radios, and boom boxes are not permitted.
- Collect only memories, leaving natural materials for all to enjoy.
- Contact the McKay Visitor Center at (608) 263-7888 for more information on the Arboretum's activities or to participate in restoration efforts.

Arboretum

1•8•4•8 NEWS

UNIVERSITY OF WISCONSIN–MADISON

Phone: 608/262-3571
Fax: 608/262-2331

Office of News and Public Affairs
28 Bascom Hall • 500 Lincoln Drive
Madison, Wisconsin 53706-1380

FOR IMMEDIATE RELEASE 7/1/96

CONTACT: Sarah Wortham, (608) 265-2538

ARBORETUM INTRODUCES FREE NEW GUIDE FOR VISITORS

MADISON — Have you ever gotten lost in the Arboretum? Wondering what those strange-looking markers are on the prairie? A free new publication will lead you through the Arboretum's 1,260 acres — and encourage you to make the most of each visit by becoming more actively involved in its programs and events.

The eight-page, oversized guide contains a detailed map of the Arboretum grounds, marked with trails and natural features, and lists hours and guidelines for visitors. Because it is being distributed around the premises, the guide will help even those visitors who don't stop by the McKay Visitor Center for information or assistance, or who pass through the Arboretum when the center is closed.

Want to find white-breasted nuthatches, the compass plant or giant moths at the Arboretum? The new guide will tell you where — and when — to look. It lists peak times to see plant species in bloom and spot birds and other wildlife.

"Too often, visitors don't experience the Arboretum to the fullest extent possible," says Director Gregory D. Armstrong. "This guide will help the public better appreciate our amazingly diverse natural attractions. But, more importantly, it describes the many ways visitors can get involved in carrying out the Arboretum's work through hands-on educational programs and volunteer activities."

Because many visitors are unfamiliar with the Arboretum's mission, the guide explains its important role as a center for research in ecological restoration. Both the famed Curtis and Greene prairies, as well as the deciduous and conifer forests and wetlands, are the product of the Arboretum's commitment to restoring the landscape to its historic state and bringing back the plants and animals that once inhabited it. Each of these ecological communities transports the visitor back to the Wisconsin that existed before people developed the land for agricultural, industrial and residential uses.

Inside the guide, an extensive four-page insert lists free public tours of Arboretum sites and sights and describes the wide variety of classes offered throughout the year.

The guide was financed by the Harlan C. Nicholls Arboretum Endowment Fund. Look for it at the McKay Visitor Center and at trailheads in the parking lots.

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Arboretum

1•8•4•8 NEWS

UNIVERSITY OF WISCONSIN–MADISON

Phone: 608/262–3571
Fax: 608/262–2331

Office of News and Public Affairs
28 Bascom Hall • 500 Lincoln Drive
Madison, Wisconsin 53706-1380

FOR IMMEDIATE RELEASE 11/21/95

CONTACT: Greg Armstrong, (608) 262-2748

MEETING WILL EXPLORE DEVELOPMENT THREAT TO ARBORETUM

MADISON — The University of Wisconsin-Madison Arboretum is prized as a natural sanctuary in the heart of the city, but rapid urban development is becoming an imposing force on the unique preserve.

Concern is mounting over the potential for high-density development in a tract of land bordering the south Arboretum, commonly known as the Grady Tract. The strip of less than 100 acres of land is currently a corn field that buffers the Arboretum from development in the city of Fitchburg. But the valuable land is platted by the city for use as apartments, single-family homes and a connector road with Seminole Highway.

Most of the area around the south Arboretum is already densely developed; it is bordered on the north by the Beltline, the west by Seminole Highway and the east by the Arbor Hills subdivision. However, the lay of the land shields the Arboretum from most of that activity.

Should the more visible southern tract be developed, many Arboretum managers believe it could threaten several of its exceptional qualities. Included in the Grady Tract is a restored suite of fire communities native to pre-settlement Wisconsin, including open prairie, oak Savannah and woodlands. This includes the renowned Greene Prairie.

- more -

"The Greene Prairie is really one of the jewels of our restoration activity, and is one of the highest-regarded prairie restorations in the world," says Donald Waller, a UW-Madison botany professor and chair of the Arboretum Committee. "It has already been degraded by flooding, siltation and the invasion of non-native plants like reed canary grass. High-density development would accelerate those impacts.

"It would also change the character of the place by changing the view from a bucolic hillside to a row of apartments," Waller adds.

The Arboretum Committee will be devoting its next meeting, scheduled for Nov. 27 to exploring possible alternative uses for the property. The board has invited numerous interested parties to the discussion, including the Dane County parks and planning commissions, the city of Fitchburg and the UW Foundation. The meeting will be held at 8 a.m. in the conference room of the McKay Center.

Greg Armstrong, director of the Arboretum, says the land is owned by Harlan, Sprague and Dawley of Indianapolis, which runs a biotechnology business there. Although no immediate development plans exist, Armstrong says the meeting can help bring mutually beneficial alternatives to the table before it's too late.

"I think there's a greater level of urgency, because it's the last undeveloped parcel of land bordering the Grady Tract," Armstrong says. "The pressure may be getting greater for the owners to sell the land, so our discussion will try to find options that benefit everyone."

Possibilities include the Dane County Parks Commission purchasing some or all of the land as an environmental corridor; working with the city to create lower-density development options; or applying for matching fund programs such as the state Department of Natural Resources Land Stewardship Program. Officials from the UW

Foundation have been invited to share ideas on funding sources.

The 300-acre Grady Tract was farmland before it was purchased by the university in the 1930s. The 50-acre Greene Prairie was planted in the mid-1940s — almost single-handedly and with painstaking detail by late UW-Madison botanist Henry Greene. Consisting of more than 200 native prairie species from a variety of soil types, the prairie also includes five species of wild orchid, one of which — the white fringed orchid — is on the federal endangered species list."With development of this last area," Armstrong says, "some of the magnificence of this tract could be lost."

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— Brian Mattmiller, (608) 262-9772

Arboretum

WISCONSIN WEEK
November 8, 1995
For Faculty & Staff
University of Wisconsin-Madison

Homes on the range

Meeting will explore development threat to Arboretum

Brian Mattmiller

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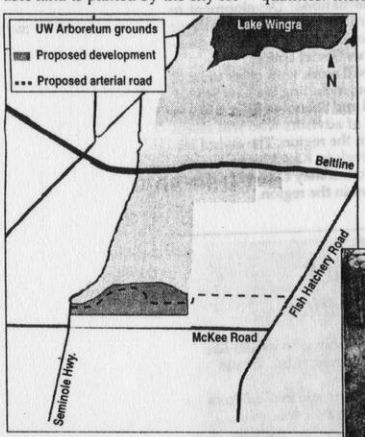
Greg Armstrong, director of the

see ARBORETUM, page 10



The area of proposed development (above) lies along the Arboretum's southern border, near the Greene Prairie, one of the most regarded prairie restorations in the world (right).

Jeff Miller

Advising

Jeff Miller

Matt Eckert, a freshman from Watertown, is one student who makes frequent use of personal computers to keep in touch with advisers. Eckert says on-line resources have helped him with some "crucial" situations.

On-line help wins fans with convenience

Brian Mattmiller

Academic advising is by nature a person-to-person connection, but the emergence of on-line advising services is making that personal process more informed and less complicated.

At UW-Madison, the on-line toolbox is brimming with huge databases of course descriptions on WiscINFO, the university's Internet service; degree auditing systems that provide fast feedback on progress toward a degree and electronic mail services that give advisers a venue to share ideas.

Consider the daily routine of Pat Henrikson, an undergraduate biology adviser who works with hundreds of undergraduates interested in the biological sciences. Sit-down meetings with students still command the biggest chunk of her schedule, but on any given day she may do the following:

- Peruse the student job board on WiscINFO, for the latest internship possibilities for her students.
- Search the World Wide Web to find information on job opportunities and hot careers listed by professional associations around the world.
- Answer numerous e-mail queries from students with nagging worries, technical questions or requests for a visit.

Perhaps her best on-line resource is the biological sciences database, created last year by the Center for Biology Education. This database provides one-stop shopping for students and advisers looking for course information that spans seven schools and colleges, 30 degree programs and several hundred faculty. It includes not only course listings, but syllabi, old examinations and other resources.

"I think there's an occasion for virtually every student I see to refer them to an on-line service," says Henrikson. "These services facilitate advising and help break the ice with students."

Students are equally enthused

see ADVISING, page 10

Four years . . . and no more?

Regents explore other schools' graduation contracts

Bill Arnold

In life, very few things are guaranteed.

Some universities, however, are trying to make graduation in four years a sure thing, by developing "compacts" or agreements that offer interested students a guarantee that they will receive an undergraduate degree in eight semesters.

During Friday's UW System Board of Regents Education Committee meeting, representatives from Indiana University, Purdue University at Indianapolis and the University of Iowa — institutions that offer four-year compacts — will make presentations on their programs. The representatives then will participate in a panel discussion on the issue and will be joined by Gary Sandefur, UW-Madison associate vice chancellor and professor of sociology.

The committee meeting will be held at 8:30 a.m. in room 1820 Van Hise Hall. The Regents meet as a full board beginning at 11:30 a.m.

There are currently no such four-year compacts in place in the UW System.

Sandefur says the discussion will be helpful as UW-Madison looks at the overall impact that a four-year compact might bring. "We're willing to take a look at what other universities are doing in this area," Sandefur says. "And, with the involvement of the deans, the University Committee, and the University Academic Planning Council, we'll be taking a look at the possible benefits of a compact, and to explore the feasibility of implementing such a program."

Citing a recent survey of UW-Madison students, Sandefur says students indicate that barriers to graduating in four years are really aspects the students control.

"The students mentioned changing majors and the number of credits they're willing to take per semester as key barriers to graduating in four years," he says, adding that access to classes or advising were not cited as being "barriers."

About one-third of all UW-Madison students receive an undergraduate degree in four years.

How do the compacts work?

At Indiana University at Bloomington, a plan called

see REGENTS, page 3

Inside

Departments

Continued

High marks for Class of '99

Freshmen bringing long list of academic credentials

Brian Mattmiller

UW-Madison's attention in recent years to improving the undergraduate environment seems to have caught the attention of academically driven students.

A look at this year's freshman class suggests the university is attracting more and more of the most academically motivated and talented high school graduates.

"There's no question our freshman classes have become a lot more competitive, but that is simply what more students are looking for — a competitive atmosphere and a challenge," says Millard "Pete" Storey, director of admissions.

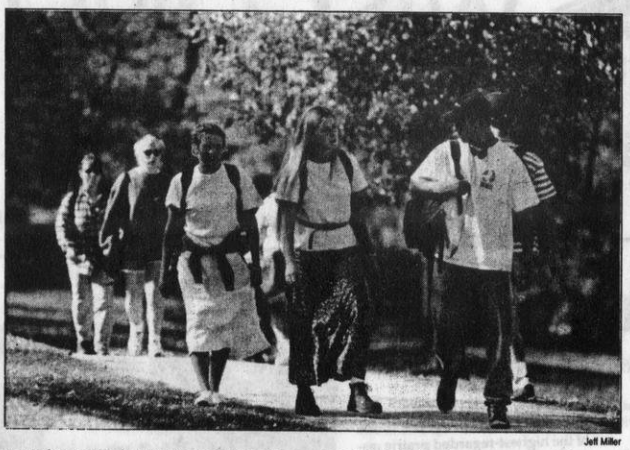
Consider these remarkable changes:

• The number of students ranking in the top 10 percent of their high school class has jumped to 43 percent of the total freshman enrollment this year, up from 35 percent two years ago.

• A total of 491 new freshmen qualified for UW-Madison's rigorous honors program this year, compared to 364 students last year and 244 the year before. The average ACT scores of those students is 30.78, up from 29.79 two years ago.

• This year, more than 2,000 students entered their freshman year with some advanced placement credits from high school, which apply toward a bachelor's degree. That compares to 793 students in the 1989-90 school year. Of this year's class, 133 entered with enough credits to have sophomore standing, and three students with enough for junior standing.

According to Storey, the changes may be a result of a strong emphasis both at the university and in the state Legislature on undergraduate scholarship, which in turn has led to a number of academic service innovations on campus. Among them are a new set of core requirements approved in 1994 aimed at bolstering the math and communication skills of all UW-Madison students, stronger advising programs and a new system that provides students with instant reports on their progress toward a degree.



Jeff Miller

Nearly half of all freshmen on campus this year ranked in the top 10 percent of their high school class, a testament to the increasing competitiveness of the applicant pool.

"To us, there's no higher measure of what we're trying to do than have a change show up in the classroom," he says.

A. Margaret Elowson, assistant dean in the College of Letters and Science, says federal financial aid reductions may also be making UW-Madison more attractive, especially for students paying in-state tuition. There is growing anxiety among students about being overloaded with debt, she says.

"Wisconsin is one of the best financial deals anywhere in the country, especially when you compare it to our sister schools in the Big Ten," she says. "Only Iowa has a lower tuition than we do."

Add to that the fact that UW-Madison is consistently viewed as one of the top public institutions in the country, and the increased competition to enroll here is understandable, Elowson says.

What this competition presents for UW-Madison, Elowson says, is a challenge to keep the curriculum as strong as possible for undergraduates. For example, the university has to create as many small-group discussion opportunities as possible in freshman courses, and more opportunities to interact with faculty.

"All students benefit from having smaller classes, and it tends to bring everyone up academically," she says. "They need to have classes where they are pushed intellectually."

Elowson says prevailing wisdom suggests that when admission criteria are raised, more and better students are attracted to campus. But at UW-Madison, it may be a combination of increased standards and improvements in the classroom making the difference.

"We've found that when you improve the undergraduate experience, more people apply," she says. "Students are looking for a challenge. They want to go where the best people are; they want to get on the right bandwagon."

NEWS & NOTES

from page 2

of cutting-edge research and theory. Yet, while we are large, our faculty members continue their commitment to providing personal attention to each participant."

Survey participants, who included alumni of the programs and corporate customers, indicated that personal contact is among Management Institute's greatest strengths. Survey respondents ranked Management Institute high in respecting the knowledge participants brought to the seminars. They also appreciated the institute's emphasis on developing interpersonal skills and networking opportunities provided by the seminars. The guide praised Management Institute's "vast list of courses [which offer] something for just about every managerial level and interest, from first-line, entry-level positions to senior executives."

Charles Krueger, chair of Management Institute, said, "The *Business Week* surveys prove that Management Institute is a very important, and respected, provider of continuing business education. We hope that this information will encourage business professionals to come see for themselves the high-quality, yet reasonably priced, training that Management Institute has offered for more than a half century."

Land tenure

Grant will aid reform in former Soviet nations

The Land Tenure Center has received a three-year, $6.9 million grant from the U.S. Agency for International Development to provide "impartial oversight and strategic guidance" of market reform efforts in countries of the former Soviet Union.

The center will work with other units of the UW-Madison, including the Law School, Business School and School of Education, to develop a team of advisors who will assess market reform in the region. The award initially calls for work in Kazakhstan and the Kyrgyz Republic and may expand its efforts to other countries in the region.

ARBORETUM

from page 1

Arboretum, says the land is owned by Harlan, Sprague and Dawley of Indianapolis, which runs a biotechnology business there. Although no immediate development plans exist, Armstrong says the meeting can help bring mutually beneficial alternatives to the table before it's too late.

"I think there's a greater level of urgency, because it's the last undeveloped parcel of land bordering the Grady Tract," Armstrong says. "The pressure may be getting greater for the owners to sell the land, so our discussion will try to find options that benefit everyone."

Possibilities include the Dane County Parks Commission purchasing some or all of the land as an environmental corridor; working with the city to create lower-density development options; or applying for matching fund programs such as the state Department of Natural Resources Land Stewardship Program. Officials from the UW Foundation have been invited to share ideas on funding sources.

The 300-acre Grady Tract was farmland before it was purchased by the university in the 1930s. The 50-acre Greene Prairie was planted in the mid-1940s — almost single-handedly and with painstaking detail by late UW-Madison botanist Henry Greene. Consisting of more than 200 native prairie species from a variety of soil types, the prairie also includes five species of wild orchid, one of which — the white fringed orchid — is on the federal endangered species list.

"With development of this last area," Armstrong says, "some of the magnificence of this tract could be lost."

ADVISING

from page 1

about their on-line options. Matt Eckert, a freshman from Watertown, says he likes the convenience of e-mail in reaching faculty, advisers and friends at any time of day. He needed it recently for an academic problem "that was really crucial at the time," and contacted his adviser.

"I was having trouble early in my calculus class, and was considering dropping the course and picking up an easier one," he says. "I didn't know what a bad grade would mean to getting into my major."

His adviser, Diane Franzen in the history department, suggested some immediate steps Eckert could take and then set up a meeting. After the meeting, Eckert decided to stick with the course, and the discussion helped him ease his fears. He now is performing well in the class.

"The convenience of e-mail is nice," he says. "It's quick and I don't get caught playing phone tag. I'm learning how to use it more as the school year goes on."

Franzen says on-line advising options are helping her improve the overall quality of her encounters with students. Electronic advising tools may take up an average of 5 percent of her time each week, she says, but they pay off exponentially.

The result is having more time to delve into what she calls "motivational advising," which includes talking with students about possible careers, graduate school options and improving the quality of their undergraduate work.

Beginning this month, two new on-line services will be added to the mix. The first is with the Degree Audit Reporting System (DARS), an automated service that gives students detailed information on their progress toward a degree. DARS will be available electronically for the first time.

Bill Miller, an assistant dean in the College of Letters and Science, said a mass e-mail was sent to all students Oct. 31 explaining the change, and how they can request the information.

UW-Madison purchased the DARS software four years ago from Miami University of Ohio, and bought into a network of more than 160 schools the use the system. DARS offers students an exact picture of where they stand in their quest for a degree, including the total credits taken and grade-point average, their classes in progress and their remaining requirements in each category.

Miller says its truly remarkable feature is the capability to create "what-if" scenarios for students who, say, are majoring in history but want to know what it would take for a degree in zoology.

UW-Madison is one of the first schools in the nation currently offering students e-mail access to their DARS audits, Miller says. In addition to giving students the reports within 24 hours of their request, Miller says the change will save money in mailing costs.

DARS reports, previously available through advisers, have been widely used by students during the system's first two years. Todd Schactman, a junior in communication arts, says he gets DARS reports every semester, and it helps him set priorities before he meets with an adviser.

"This makes my time and my adviser's time a lot more beneficial because I have an agenda coming in," he says.

A second service, called AdvisorLink, will be designed as a communication link for advisers across campus.

Advisor-Link

A how-to guide

Campus advisors who would like to subscribe to AdvisorLink should follow these steps:

• Send an electronic mail address to listserver@relay.doit.wisc.edu

• Leave the subject line blank.

• The first line of your message should read:

subscribe advisor-link YourFirstname YourLastname

• Remember that this is a private list, and subscription requests are not automatic. Your request will be forwarded to the list owner for approval.

Emily Comstock, assistant dean for academic services in the School of Education, says the new tool will help build a sense of community among the university's 400-plus advisers. The list, to which advisers must subscribe, will provide notice of the latest course openings and cancellations; significant curriculum changes; and professional development opportunities.

The widespread use of electronic advising tools isn't without concerns, however.

"We have to be careful not to make the mistake of believing all students communicate this way," adds Comstock. About 80 percent of all UW-Madison students have e-mail accounts, but that doesn't mean everyone is using them.

"We can't stop the train," Comstock says, "but with careful planning we can help things run smoothly."

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NEWS

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URBANIZATION TAKING A TOLL ON FAMOUS GREENE PRAIRIE

MADISON — One of the world's oldest and most renowned restored prairies is succumbing to the effects of urban development.

The University of Wisconsin-Madison Arboretum's Greene Prairie, unique among restored prairies in its variety and composition of native plants, has shrunk significantly as the result of siltation and the pernicious invasion of an exotic grass.

About one-fifth of the 50-acre prairie, planted almost single-handedly by the late UW-Madison botanist Henry Greene, has been lost, crowded out by reed canary grass, a non-native plant that thrives in the silt sediment laid down by the frequent and sustained flooding of Nine Springs Creek, said Virginia Kline, Arboretum ecologist.

The problem, according to Kline, stems from rapid urban development of the surrounding area, including the Dunn's Marsh watershed, a 1,100-acre tract in the cities of Madison and Fitchburg that lies directly upstream from the Arboretum and the prairie lovingly planted by a scientist who insisted on doing the work himself.

New roads and driveways, hard-packed lawns and a stream bed choked with sediment have caused extensive and prolonged flooding of portions of the prairie and paved the way for the invasion of the prairie by plants that soon crowd out native prairie plants.

"As the pace of urban development has picked up around the Dunn's Marsh

- more -

watershed, runoff has increased dramatically," said Arboretum Director Gregory D. Armstrong. "That has led to an increase in flooding in the Greene Prairie, which brings in sediment and the seeds of problem plants like reed canary grass, a plant so competitive that it obliterates almost everything else."

The transformation of a degraded cornfield — into what is generally considered to be one of the most successful prairie restorations anywhere — began in 1945 when Greene selected and surveyed the site of the future prairie.

A curator in the UW-Madison Herbarium, Greene's professional specialty was mycology, the study of fungi. But he was also an expert on prairies. He was especially knowledgeable about the soil and moisture conditions that different prairie plants required, and what combinations of plants grew together naturally.

"It's a very special prairie," said Kline. "It is unique in its variety, from dry sandy soils to wet areas, conditions that sustain a great variety of species."

Today, the prairie has more than 200 native prairie species including five species of orchid, one of which, the prairie white fringed orchid, is listed by the federal government as endangered.

"If we don't solve our drainage problem, that population could be wiped out," Kline said.

Arboretum field crews have attempted to beat back the invaders with fire and herbicides, but Kline said the problem won't be solved until a way is found to alleviate the flooding of the prairie, a condition that favors reed canary grass.

Some hope, she said, can be found in an ongoing planning effort between Madison, Fitchburg, Dane County, the Department of Natural Resources and the University. Strategies to mitigate the repeated storm water surges that inundate the Greene Prairie should be reflected in a soon-to-be-completed study of the Dunn's Marsh watershed.

Kline noted that the watershed is almost completely developed now. The impossibility of further large-scale development there, coupled with the ideas being developed by local units of government to reduce storm water surge, may help alleviate the flooding of the Greene Prairie.

But those strategies may take years to implement. "We'll just have to wait and see if upstream improvements help," said Kline. "Once the flooding is taken care of, we intend to do all we can to eliminate the reed canary grass and restore what we've lost."

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— Terry Devitt, (608) 262-8282

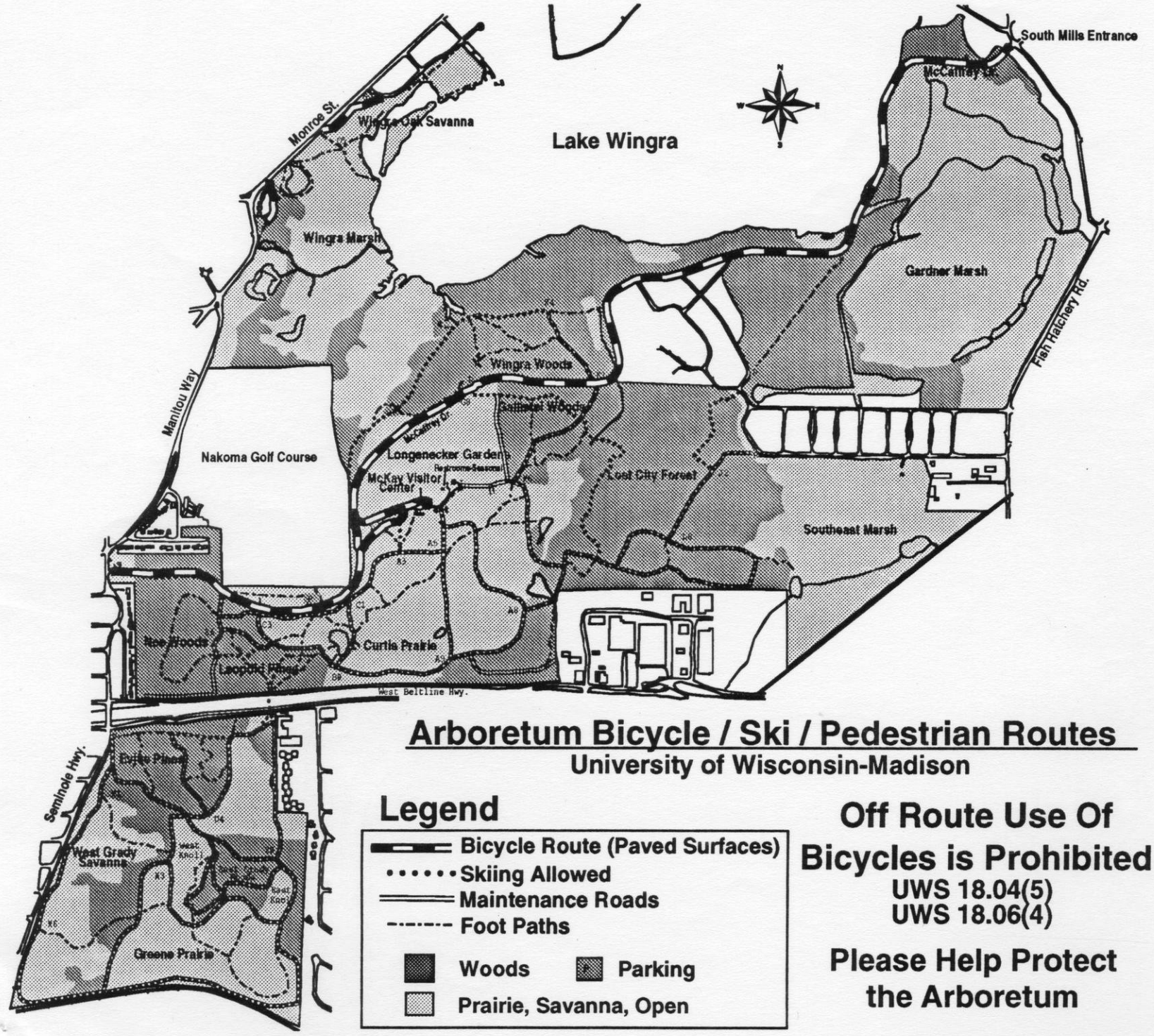
ARBORETUM BIKE POLICY

The University of Wisconsin-Madison Arboretum permits bicycles on McCaffrey and Longenecker Drives. Bicyclists are required to ride within eight (8) feet of the right-hand shoulder. Bikes are not permitted on trails in the Arboretum except on officially designated bike trails. Such trails will be identified with signs and occur as part of a larger municipal trail system.

Requests for additional bicycle paths in the Arboretum are considered by the Arboretum Committee on a case by case basis. Requests will only be considered where the proposed trail is contained within an area no farther than fifteen (15) feet from the existing boundaries of the Arboretum and where said area of the Arboretum abuts municipal jurisdictions and where the purpose of such bike trail is to increase safety to both bicyclists and pedestrians and where it has been reasonably established that no other trail alternative outside of the Arboretum is feasible. No bike trails will be established that would cause safety concerns for present Arboretum users or interfere with the Arboretum's main purpose and use of education and research. It is the responsibility of the requester to fund construction and maintenance and to assume liability for any path so permitted.

BIKE POLICY FOR CAMPUS NATURAL AREAS

Bicycles are allowed in Campus Natural Areas on trails designated as bike trails on the Campus Natural Areas map and by signs along the trails. Bicycle paths in these areas will be reviewed at least every two (2) years to determine their appropriateness and impact in the area and to review adherence to trail regulations by bicyclists. Bike use may be removed from trails in areas at any time where regulations are not followed and such abuse results in damage that significantly reduces the area's ability to meet established Arboretum goals. A fine system will be established in conjunction with the University and enforced to its best abilities. As University funds permit, the Arboretum will establish bicycle racks and erect signs that state the objectives of the Campus Natural Areas and their regulations along with a map of the trails where bicycle use is permitted, at entrances to Campus Natural Areas. All means should be attempted to erect such signs and racks by January 1, 1995. Campus areas that require bike racks and signs include but are not limited to Upper Eagle Heights Woods, Wally Bauman Woods, Frautschi Point, Picnic Point, and Class of 1918 Marsh.



Arboretum Bicycle / Ski / Pedestrian Routes

University of Wisconsin-Madison

Legend

- Bicycle Route (Paved Surfaces)
- Skiing Allowed
- Maintenance Roads
- Foot Paths
- Woods
- Parking
- Prairie, Savanna, Open

Off Route Use Of Bicycles is Prohibited

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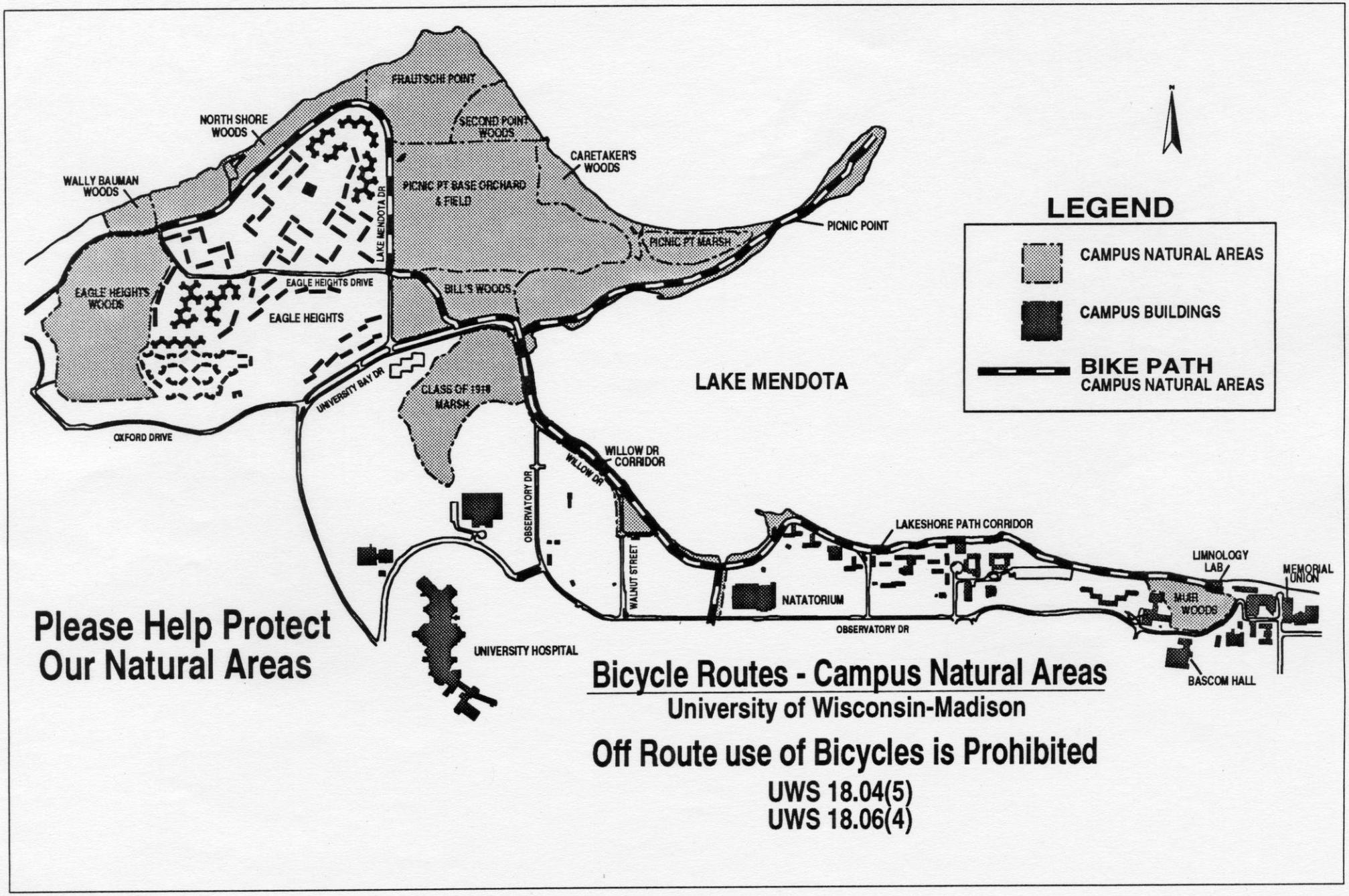
UWS 18.06(4)

Please Help Protect the Arboretum



Please Help Protect Our Natural Areas

Bicycle Routes - Campus Natural Areas

University of Wisconsin-Madison

Off Route use of Bicycles is Prohibited

UWS 18.04(5)
UWS 18.06(4)

Arboretum

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NEWS

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FOR IMMEDIATE RELEASE 5/25/95

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NEW EXOTIC INVADER THREATENS ARBORETUM'S WOODLAND FLORA

MADISON — A prolific exotic plant has turned up in the University of Wisconsin-Madison Arboretum, posing a severe threat to the painstakingly restored native woodland plant communities, according to Arboretum officials.

The plant, known as garlic mustard, was introduced from Europe to the United States by gardeners more than 100 years ago.

Valued as a folk medicine and food, the plant is a fragile-looking herb with small white flowers. It was first brought to Long Island, N.Y., in 1868, but quickly spread from garden to forest, displacing many native woodland wildflowers.

"This plant poses the biggest threat to the Arboretum's forests and woodlands since they were invaded by the exotic shrubs buckthorn and honeysuckle more than 30 years ago," said Gregory D. Armstrong, director of the Arboretum. "It is very aggressive. It completely dominates the forest floor, replacing native flora and the wildlife that depend on it."

Although the plant was first seen in the Arboretum only four years ago, it has spread very rapidly, especially in areas affected by storm water channels.

The plant is prolific, producing as many as 800 seeds. A dense stand can yield 20,000 to 40,000 seeds per square meter. Seeds are dispersed naturally by an explosive seed pod but may also be spread on the fur of larger animals such as deer, and by people who may pick

-more-

up seeds on their clothing and shoes.

According to Armstrong, the plant has been found in the Arboretum on both sides of the Beltline, including the Leopold and Evjue Pines, the Grady Tract, and an area known as the Duck Pond.

The problem is serious enough that Arboretum officials have decided to seal off affected areas and mount a concerted effort to eradicate the plant, Armstrong said.

The eradication effort means some Arboretum trails will be closed to the public and a vigorous campaign — employing pulling, digging, fire and herbicide — will be mounted in an effort to contain the plant and prevent its spread to other parts of the Arboretum.

The UW-Madison Arboretum is a 1,200-acre collection of restored Wisconsin plant communities. Founded in the 1930s, its purpose is to mirror in miniature the pre-settlement Wisconsin landscape.

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— Terry Devitt, (608) 262-8282

Arboretum

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NEWS

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UW TO ENFORCE RULES GOVERNING BIKES IN NATURAL AREAS

MADISON — Beginning in March, bicyclists who wander off designated bike paths in University of Wisconsin-Madison natural areas could have an unexpected encounter — but not with nature.

Those off-road bicyclists who have come to view the trails of UW-Madison's Arboretum, Picnic Point, Muir Woods and the Eagle Heights natural areas as challenging topography could face fines ranging from $89 to $500.

Enforcement of existing state law will be stepped up beginning next month because damage to campus natural areas and trails by off-road bicycles has escalated dramatically in recent years, according to Gregory D. Armstrong, director of the UW-Madison Arboretum.

"Over the past five years a lot of damage has been done to university natural areas by off-road bikes," said Armstrong, who estimated that damage to natural areas caused by off-road bikes can be measured in tens of thousands of dollars.

University natural areas, including the Arboretum, encompass nearly 1,600 acres. Laced with footpaths and hiking trails and dotted with Indian mounds and rare plants, UW-Madison's natural areas are used for research, teaching and recreation by thousands of students, faculty and campus visitors every year.

According to Armstrong, damage to those natural areas since 1990 when off-road

-more-

bicycling began to experience a surge in popularity has been extensive. The rate of erosion of paths, especially on the steep slopes of the natural areas that border Lake Mendota, has accelerated. Some paths have been washed out entirely and new trails have been blazed where none existed before, Armstrong said.

"There are places where the bicycles have loosened the soil and it just tremendously accelerates the rate or erosion," Armstrong said. "There are some places where the topography is so steep that when you have this kind of activity it simply washes away."

Moreover, the university has been forced to erect snow fencing around one Indian mound near Eagle Heights to prevent its use as a jump by some individuals.

Donald Waller, a UW-Madison professor of botany and a member of the Arboretum Committee, said the new rules are needed to protect sensitive natural areas from disturbance.

"While it hasn't been quantified, it seems that off-path bike traffic has obliterated wildflowers and herbaceous plants in many areas," Waller said. "It would sadden many of us if we lost our pretty display of spring wildflowers in these areas."

When the problems caused by off-road bikes was first noticed five years ago, signs were posted along trails in natural areas and Arboretum staff attempted to curb trail use by placing logs and other natural barriers across trails.

But the signs seem to have done little good, and the obstacles placed on paths were easily circumvented, said Armstrong: "We put up signs in 1990, but they've been roundly ignored. Now our only alternative seems to be to enforce the law."

The problem is a vexing one for the university, said Armstrong, because there are very few public places in Dane County where off-road bicyclists can go. The only alternative for many people who wanted to practice off-road bicycling, he said, seemed to be the

university's natural areas.

To address the problem, campus police, some on bikes, will be patrolling campus natural areas and will begin issuing citations next month.

Armstrong noted that bicycles will still be welcomed on some of the main trails in campus natural areas, and along McCaffrey and Longenecker drives in the Arboretum. Trails open to bikes will be clearly marked and maps delineating bicycle trails in natural areas will be posted and published.

According to Waller, stepped-up enforcement is an experiment: "If we find this isn't working, the Arboretum committee may consider more drastic steps that might exclude bicycles from the main path on Picnic Point as well.

"It is important for bicyclists to keep to the paths and respect the rights of pedestrians so they will continue to be welcomed. We expect that once bicyclists know about these problems and learn the rules that they will be cooperative in obeying them," Waller said.

Policies governing the use of bicycles in campus natural areas and the Arboretum were worked out by the Arboretum Committee and reviewed by the UW-Madison Bicycle and Pedestrian Committee.

Anyone interested in copies of the policy or maps of bicycle paths that traverse campus natural areas can contact the UW-Madison Arboretum at (608) 262-2746.

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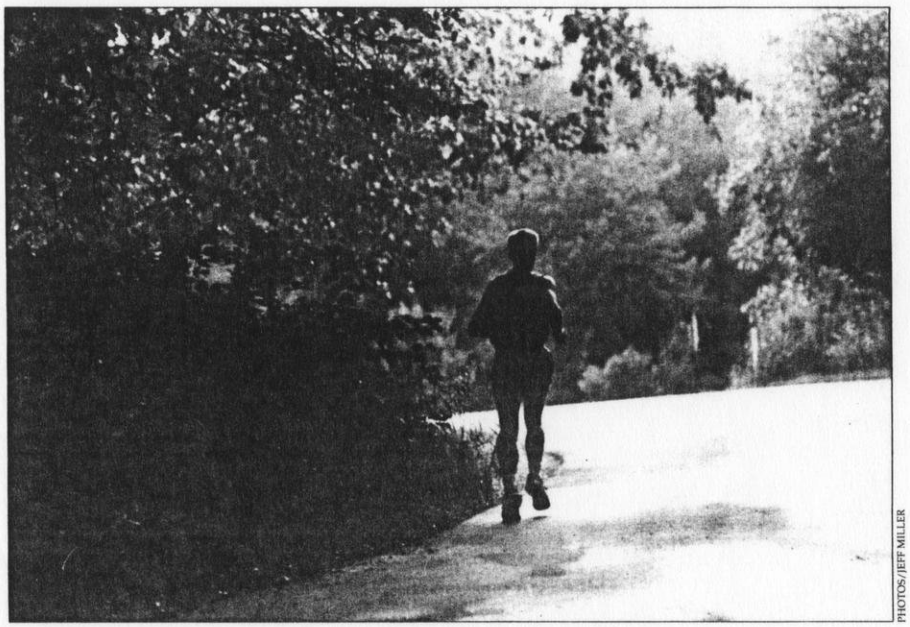
— Terry Devitt, (608) 262-8282

Arboretum

✦ MILESTONES ✦



PHOTOS/JEFF MILLER

Master plan charts improvements for Arboretum

The world's first organized effort at ecological restoration marks 60 years

During the past 60 years, the Arboretum has been painstakingly developed into what is perhaps the world's finest collection of restored native landscapes.

That tradition will continue and be strengthened with the implementation of a new master plan to be unveiled publicly on Sept. 25 during the Arboretum's 60th anniversary celebration at the McKay Center.

The plan, according to Arboretum Director Gregory D. Armstrong, will serve as a blueprint, guiding development of the Arboretum and its numerous collections of restored plant communities for the foreseeable future.

"The initial development of the Arboretum was really the world's first organized effort at ecological restoration," Armstrong said. "In essence, we're living out Aldo Leopold's land ethic. The purpose of the plan is to provide a framework for development that will keep us on that path."

Celebrate!

The Arboretum will mark 60 years of restoring Wisconsin landscapes with an open house and celebration on Sunday, Sept. 25, at the McKay Center. The birthday party will begin at 1 p.m. with a talk by Arboretum Director Gregory D. Armstrong, who will unveil a new master plan for the Arboretum (see related story). At 2:30 p.m. Nina Leopold Bradley will read the speech her father, Aldo Leopold, delivered 60 years ago when the Arboretum was first dedicated. Bradley's recitation will be followed by a speech by W. Charles Read, acting dean of the UW-Madison Graduate School. Tours will be offered throughout the afternoon and displays will highlight aspects of the Arboretum and its missions of teaching, research and outreach. The events are free and open to the public.

The plan, which has been under development for more than a year, is intended to guide land use, traffic flow and landscape form while, at the same time, maintaining the integrity of the different biological communities that make up the Arboretum.

Highlights of the plan include:

• Expansion of the McKay Visitor Center to include a 250-seat auditorium, offices, laboratories and a new reception and orientation center.

• The development of an oak savanna, once southern Wisconsin's dominant landscape, at the Arboretum's Olbrich entrance on Seminole Highway. The development the savanna at the Arboretum's main entrance, Armstrong said, would be more emblematic of the Arboretum's restoration ecology emphasis than the traditional landscaping that now frames the entrance.

• Prairie Drive, the road that fronts the historic Curtis Prairie, would be improved to include pedestrian pathways and new informational displays. Curtis Prairie, the world's oldest restored prairie, would also be expanded.

• The development of an extensive oak savanna to serve as a setting for the expanded McKay Center. Incorporated into this native landscape would be improved drive, parking and pedestrian pathways; informational displays; and a council ring overlooking the prairie.

• The improvement of Longenecker Garden, Wisconsin's largest collection of woody trees and shrubs, to include garden pathways, displays and improved seating.

• The establishment of a native Wisconsin garden that would include labeled displays of prairie, woodland and wetland plants.

• Adding outdoor educational stations and trail improvements. Informational displays, seating areas adjacent to prairies and woodlands, and several new trails would be added to better meet the needs of groups and individual visitors to the Arboretum's collections.

• A south Arboretum visitor reception area would be developed to improve access to some of the Arboretum's finest ecological restorations, including the internationally renowned Green Prairie and extensive oak savannas.

Parking would be relocated and expanded. Trails would be improved, informational displays would be added and oak forest and oak savanna restorations would be undertaken.

"The plan represents our dreams and aspirations for the future," said Armstrong. "Over the past year we've taken a hard look at our facilities and our constituencies and we think we've come up with a plan that is going to help us meet our responsibilities to the university community and the community at large."

For anyone interested in learning more about the new master plan for the Arboretum, copies are available for review at the Arboretum's McKay Center, 1207 Seminole Highway.

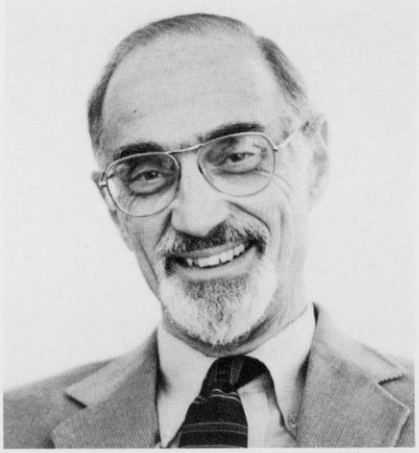
— Terry Devitt

From solitude to science: A lone runner, above, makes his way down Arboretum Drive. High school students from Watertown, at left, measure prairie grasses during a field trip to the Arboretum's Curtis Prairie as part of an Earth Partnership Program sponsored by the National Science Foundation. The Arboretum will celebrate 60 years by unveiling its master plan to guide future land use, traffic flow and landscape form, while maintaining the integrity of the biological communities that comprise the Arboretum.

Our First 50 Years

The University of Wisconsin Arboretum
1934-1984

(Cover) Civilian Conservation Corps crew breaking ground in the old Nelson pasture in the early stages of restoration of Curtis Prairie. This photograph was taken November 5, 1934, just a few months after CCC Company 2670 began working out of "Camp Madison" at the Arboretum.



UW Vice Chancellor and Political Science Professor Bernard C. Cohen presented a rededication of the Arboretum during the anniversary celebration on June 17.

A look back, and a rededication

The McKay Center
Sunday, June 17, 1984

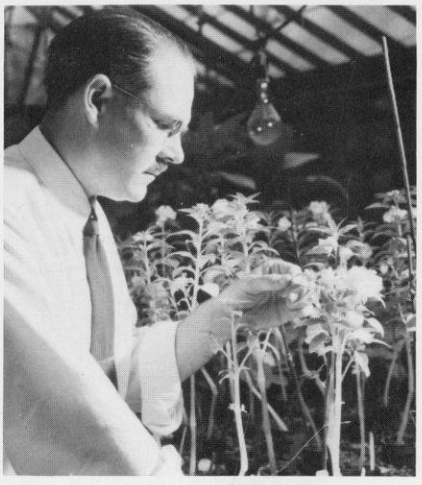
The formal dedication of the UW Arboretum was held in a barn that stood on the present site of the McKay Center on the morning of Sunday, June 17, 1934. Among the speakers were UW President Glenn Frank; Landscape Architect John Nolen, who had proposed creation of an arboretum for the University a quarter of a century earlier; UW Horticulture Professor G. William Longenecker; and conservationist Aldo Leopold, whose speech is printed here for the first time, and was reread at the anniversary celebration by his daughter Nina Leopold Bradley.

Other speeches, reflecting on the progress that has been made toward the goals Leopold outlined, were also presented at the anniversary celebration, and texts of these presentations follow the text of Leopold's speech.

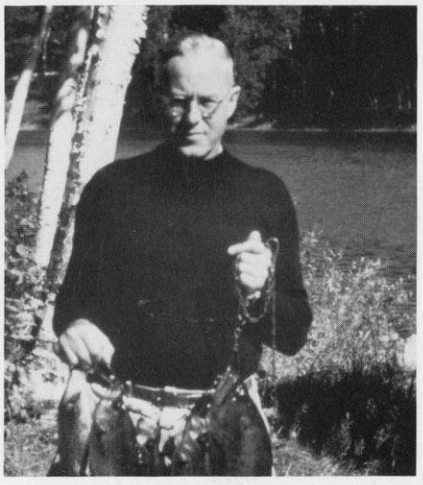
Michael Olbrich

Joseph W. Jackson

John Curtis



G. William Longenecker



Some of the people. Of the many who made the UW Arboretum possible, these were the leaders. A photo of Aldo Leopold appears on page 4.

What Is the University of Wisconsin Arboretum, Wild Life Refuge, and Forest Experiment Preserve?

An address by Aldo Leopold at the dedication of the University of Wisconsin Arboretum June 17, 1934

What Is an Arboretum? An arboretum is ordinarily a place where the serious-minded citizen can learn, by looking at them, the difference between a white and a black spruce, or see in person a Russian olive, a tamarisk, or an Arizona cypress. That is, it is a collection of trees.

Sometimes an arboretum also serves as an outdoor library of horticultural varieties, i.e., a place where one can compare all the apples, all the lilacs, all the roses.

Some advanced institutions arrange their tree-collection as natural associations, rather than as taxonomic groups. They present, for example, a sample of the Douglas fir forest of the Northwest, showing the hemlocks, larches, and balsams which grow in association with Douglas fir, and also the ferns, salmonberries, yews, and shrubs which grow under it, and if possible the mosses and herbs which grow under the shrubs. Such exhibits are called "ecological groupings" and represent "advanced thought" in arboretum management.

The Wisconsin Arboretum. We want to have all these things, but they by no means represent the main idea which we are trying to express here. It is something new and different. Perhaps we should not call the place an arboretum at all. Whether our idea is a worthy one, I will have to leave you to judge.

Our idea, in a nutshell, is to reconstruct, primarily for the use of

Two square miles of derelict farmland — the Arboretum land at the time of acquisition

An aerial view from the southwest, about 1932. Note the Nelson barn, center right, the farm fields and woodlots and the open wetland west of Lake Wingra. The large tree along the drive just below and to the right of the center of the photograph was later named the Joseph W. Jackson oak in honor of the man who led the drive for land acquisition.

the University, a sample of original Wisconsin — a sample of what Dane County looked like when our ancestors arrived here during the 1840s.

Obviously, it will take 50 years to do this thing. Obviously, too, it will be done for research rather than for amusement, and for use by the University, rather than for use by the town.

What I want to try and picture today is why it is important to the future welfare of our state to know what it was like before we took it away from the Indians.

Wingra Woods in 1942. "...the only natural thing about it was the trees."

Rebuilding the Wisconsin Landscape. First let me convince you that if you were set down, blindfolded, in Nakoma in 1840, you would not only fail to recognize the place, but you might fail to realize you were in Wisconsin at all.

This hill on which we stand was then an "oak-opening." Our grandparents describe, sometimes with rapture, the beauty of these open orchard-like stands of oaks, interspersed with copses of shrubs, and the profusion of prairie grasses, and flowers which grew between. But just what shrubs, grasses, and flowers were they? We don't know. Why did they remain open, instead of growing up to solid woods? Probably fire, but we're not sure. What oaks? Largely burr-oak, but we are not sure. We do know this, that the bluegrass which now covers half of our county was not present — it came with the white man — while the native grasses which then grew here are now rare or even possibly extinct. The pheasants and possibly even the quail which now inhabit Nakoma were absent; instead the oak-openings were populated with sharptailed grouse, then appropriately called "burr-oak grouse," and now found only a hundred miles to the north. The wild turkey apparently did not occur. The copses contained the ordinary partridge or ruffed grouse. There were elk and deer — elk horns have been pulled out of our local marshes, and of deer we have ample records.

The Wingra Marsh, which we boast of as largely "unspoiled," we would not have recognized in 1840. Those waving meadows of grass, rushes, and dogwood were then largely a tamarack forest, undergrown with sphagnum moss and orchids. We know this because tamarack logs were encountered in draining the golf course. The tamarack forest has been gradually converted into grassland by repeated burning, cutting, grazing, and mowing — a process still plainly visible in any of the tamarack relicts of the eastern half of the county.

The deep layers of peat which comprise this marsh are merely the closely packed remains of sphagnum plants which could not decay because of the acid water in which they were "pickled" through innumerable generations. Professor Fassett of the Botany Department takes his students there to exhume samples of this peat from various depths, and in these samples he finds embalmed the very pollen grains which fell or were blown into the marsh from the plants then growing in and around it. So perfectly are these pollens preserved that their shape and structure tells the kinds of plants which grew, while the relative abundance of the various kinds tells which plants were then most common. The bog is, in short, a vast historical library telling the story of the arboretum back to the Glacial Epoch, 10,000 years ago. Its volumes are still largely untranslated, but it is easy to see why they constitute a valuable educational and scientific asset.

Lake Wingra itself wears so different an aspect that the early settler would not know it now. Much of the shore was then a wild rice bed. The water level fluctuated more, but averaged higher. It was full of waterfowl, whereas now the ducks show almost an aversion to it.

Presumably the introduction of carp contributed heavily to these changes, but we do not know.

Why Study Original Wisconsin? Granted, then, that we have radically changed the aspect of land, what of it? It's still good to look at — why worry? Why try to discover the exact processes by which the Wisconsin of 1840 became the Wisconsin of 1930? Americans shall look forward, not backward, so why dig up these ecological graves?

Because we are just beginning to realize that along with the intentional and necessary changes in the soil and its flora and fauna, we have also induced unintentional and unnecessary changes which threaten to undermine the future capacity of the soil to support our civilization.

In some places these changes will merely reduce our standard of living — physical, in the sense of a healthy agriculture; spiritual, in the sense of needless spoliation of natural beauty. In other places, these changes threaten the actual physical existence of even the present social structure. In some cases, the damage is temporary, in others permanent.

For example, the erosion of topsoil which followed too much wheat and too many cattle is carrying the best parts of southwestern Wisconsin to the Gulf of Mexico. It will take time, geological time, to repair this loss.

The fires which followed lumbering have probably cut by half, for at least a generation or two, the capacity of northern Wisconsin to support a self-sustaining population. Everybody knows this, but few know that the same fires have burned up many of the peat beds in our drained marshes, and thus threaten to turn land once too wet into a future sand-dune. Three marshes in Dane County have been burning all summer. When some old rattletrap of a building catches fire we all rush to the rescue, but when the compound interest of 10,000 years of plants catches fire, our officials sit by with folded hands while the average citizen's depth of understanding is reflected by the observation that he dislikes the smell of peat smoke.

The new insects which modern transportation continuously imports from the four corners of the earth are a standing threat to future agriculture. Our white pine — the very backbone of our original economic structure — now threatens to go down before the

While a number of speeches were made at the dedication of the UW Arboretum on June 17, 1934, the one delivered by Aldo Leopold retains a special interest because it so clearly defines the special mission of the Arboretum and describes so much of the development that has taken place here since.

Leopold had been a member of the UW faculty for just over a year at the time of the dedication, and he had been thinking about the Arboretum project even longer. His interest in the Arboretum and his involvement in it were to continue until the time of his death in 1948, and so spanned one of the most productive periods of his life.

The text printed here as Leopold's dedication address is a version of the speech to which Leopold attached a note reading, "Dear Colonel (Jackson): This is a popularized version of the speech I gave at the dedication.... It will be some time before I can get the other one out in printable form."

A printed version, which appeared in "Parks & Recreation" magazine (Vol. 28, 1934), is quite different — shorter and much less detailed in its references to the Arboretum. This being the case, and also because this version has apparently never been printed anywhere, we chose it for our anniversary publication.

Aldo Leopold

blister rust, an imported disease. In the offing stands the threat of June-beetles (white grubs) making it imperative to cut down all the white oaks in our pastures. Granted we could shade our cows under tin roofs — who would want to live in a Wisconsin of oakless pastures?

Now this is not a tirade against careless farming, lumbering, or transportation. It is rather an admission that the tools wherewith we are building our civilization are so powerful, and their use has such complex and unexpected consequences, that we are tearing down about as fast as we are building up. It is an admission that science does not yet know enough, or is not yet sufficiently listened to, to anticipate and prevent this process of wreckage which attends our supposedly advancing footsteps.

Research. The business of a University has heretofore been conceived to be the preparation of citizens to cope with their environment. The University must now take on the additional function of preserving an environment fit to support citizens. This task is of a complexity far beyond what I can here take time to explain. I will ask you to accept my word for the fact that it is a long and difficult job. To perform it, a University must have, for the daily use of its faculty and students, a living exhibit of what Wisconsin was, what it is, and what it expects to become. Examples of what it is lie on every hand. What it expects to become may be exemplified on public forests, refuges, farms, and parks. What it was is to be exemplified on the Arboretum, and I hope on numerous areas created for the purpose.

This, in a nutshell, is the function of the Arboretum: a reconstructed sample of old Wisconsin, to serve as a bench mark, a starting point, in the long and laborious job of building a permanent and mutually beneficial relationship between civilized men and a civilized landscape. ■

Nina Leopold Bradley

Leopold's daughter, Nina Leopold Bradley, was too young to participate in the Arboretum dedication in 1934, but she remembers her father's interest in the Arboretum well, and comments that it was of enormous importance to him and probably in many ways a starting point for much he did afterward, including the experiences at the derelict Sauk County farm that provided the basis for his classic A Sand County Almanac. *One of her special memories is a Christmas walk with her father in 1947, when the two Leopolds first discovered pine seedlings sprouting in the restored pine forest, then about fourteen years old, and since named in Professor Leopold's honor.*

Since her youth in Madison Ms. Bradley has herself carried on the Leopold tradition of research in natural history and wildlife ecology, and has studied Hawaiian geese in Hawaii and the behavior of the water buck in Africa. For the last seven years she and her husband, Charles, have operated an ecological study program at the Leopold Memorial Reserve at the site of the Leopolds' sand county farm.

Keynote Address

The University of Wisconsin Arboretum from a Distance

by Peter Shaw Ashton

I have accepted your invitation to speak at this celebration as perhaps the greatest single honor I have received since arriving in the United States five years ago. First, I have admired Aldo Leopold since I was a child. His gentle wisdom has greatly influenced my career as a scientist, as well as my broader quest for a deeper understanding of man's relationship with the natural world. The Arboretum now stands as testimony to Leopold's vision, here embodied in a down-to-earth, yet subtle and uncompromisingly perfectionist approach to the restoration of damaged landscapes.

As Leopold predicted, it has taken fifty years to heal the land, and there is still much to do. You have been extraordinarily lucky in attracting the best people to do the job — people not only rigorous in their science but broad in their knowledge and attitude toward the task. If it was Leopold's ideas that influenced those who founded the Arboretum, it was John T. Curtis and Henry C. Greene who implemented these ideas, and in so doing, secured a place for the Arboretum in the history of plant ecology. A tradition of excellence has been set, and is extended into our own time through the work of Grant Cottam, through the limnological research carried out as part of the International Biological Program, and through the multitude of projects that continue in the Arboretum today.

The key to the remarkable level of success achieved has been the holistic approach that has been adopted. This is notably exemplified by the restoration of the prairies. That project itself is of great interest to me, for these communities, with their immense number of species and intricate spatial and temporal patterns, bear interesting analogy with tropical rain forests, whose community structure I have been studying now for more than twenty-five years. The work at Madison has done

Development

Digging plants near the Wisconsin River. Supervisor Ted Sperry, right

much to explain the subtle interactions, often at the species level, which determine the composition of a community and its persistence in time. This has been done by the method, novel at the time, of rebuilding communities from scratch, on the basis of meticulous historical research and many years of empirical experience. As a consequence of these celebrated experiments, solutions have been found to the problems that are encountered in attempts to establish a sustainable community in an alien habitat, and on soils irreversibly altered through injudicious farming practices. By the same token, we now have more understanding of why it is that exotic species so infrequently (though there are exceptions) succeed in invading natural vegetation.

The importance of an understanding of limiting factors in community management, and specifically the use of fire in the maintenance of prairies, was not itself a new discovery. The plains Indians had, of course, developed the technique from empirical experience over centuries prior to the arrival of settlers. As far as I am aware though, the first person to use fire as a management tool in the western scientific tradition was H. Slade, a forester in Burma in the 1890s who learned through experiment that fire was essential in the maintenance of tak stands. He in turn was fired for his heresy, and it took fifty years before his discovery became generally accepted in forest management and became recognized as far afield as the loblolly forests of Georgia. Nor was the value of careful monitoring of individual plants within communities over prolonged periods, important though this is, first demonstrated at Madison. My own former instructor in plant ecology, A.S. Watt, established permanent plots and enclosures in acid grassland in eastern England more than fifty years ago, and has followed patterns of change within them ever since.

Rather, then, the prairie experiments here at Wisconsin have shown the importance of integrating pure and applied science, and careful studies at varying scales of space and time, as a means to design and implement management systems aimed at sustaining particular communities. This work has provided incontrovertible proof of the necessity for active management of natural areas, a concept which remains inadequately recognized and is still deemed treasonous among some whose experience of the natural world does not extend to practical management levels.

Above all, the research associated with the restoration of natural communities in this Arboretum has provided a compelling case for long-term studies in biology, and for the value of sites where permanent control, and thus consistent management, can be assumed for research.

In fact, totally novel ideas are exceptionally rare. Rather, science progresses through the serendipitous convergence of advances in different fields, and through the ingenious transfer of established techniques from one field of endeavor into another. As a personal example, you may be surprised to hear that, were it not for J.T. Curtis and the so-called Madison school of plant ecology, it is unlikely that I would be standing before you this afternoon. As an ambitious, but chronically ingenuous, young graduate student in the distant isolation of the Sultanate of Brunei in Borneo, I undertook a

A CCC prairie watering detail did battle with the hottest summer on record — 1936

gargantuan plot survey aimed at establishing interrelationships between soil and species composition in a tropical rain forest. Thirty thousand trees were counted and mapped, and identified as belonging to nearly eight hundred species. I returned to England elated but tremulous, for I had not the first idea how I was to bring order out of this mountain of undisciplined data. Fortunately, providence came to my aid. Within weeks of my return a paper was published which was to become a classic: J.R. Bray and J.T. Curtis' "Ordination of Upland Forest Communities in Southern Wisconsin." I read that paper with the excitement of a discoverer of buried treasure, and immediately set to work cranking a manual calculator eighteen hours a day for three weeks. The result was the first demonstration of a method that could analyze floristic variation within the most complex plant communities on earth, and a spectacular vindication of the first method of multidimensional ordination, a method which still remains among the most robust that has been devised.

I am fascinated to read the history of attempts to drain the wetlands surrounding Lake Wingra, and the consequent, and largely unpredicted, effects these attempts have had on hydrology and vegetation. Here, too, the Arboretum provided the opportunity to carefully monitor change, and to experiment with restorative methods over prolonged periods. The general and widespread detrimental effects of draining wetlands is by now well known, but here again there is still much to be learned. An area of particular concern to me, as director of an urban arboretum, is the effect of housing development and the accompanying diversion or confinement of streams in culverts on the hydrology of the adjacent landscape. We are seeing indirect, long-term effects on soil water, humification and surface compaction, to the detriment of our urban parks and woodlands. You at Madison have the resource, the intellectual leadership, and the experience with large scale experimental manipulation of the landscape and its vegetation cover to carry out rigorous studies aimed at resolving these important practical problems.

I cite these examples to emphasize the universality of so many of the processes within plant communities, and hence the general value of local research.

The forests and forest biologists of Wisconsin have helped us, for

CCC enrollee with root of prairie dock, 1939. A dream of a thousand acres of silphiums

example, to manage the forests of darkest Borneo. I am wondering if Borneo can bring light to Wisconsin. Specifically, I am intrigued by descriptions I have read concerning the stand structure and distribution of your oak, and maple-beech-basswood forests. The former occur on drier, the latter on moister valley sites. In Borneo, just as in your Arboretum, the bottomlands and other well-watered sites support a magnificent — in the case of Borneo, a primeval — forest of giant trees whose dense crowns shelter a spacious, open subcanopy, but preclude the regeneration of all but their own shade-tolerant seedlings. In Borneo, our twenty-year studies of mapped and tagged trees, emulating the Wisconsin example, have shown the valley forests to have a lower production rate than the thrifty forests on drier less fertile sites. This was not anticipated, but is, I now suspect, a general phenomenon in climax forest communities. Is this your experience too? The implication, that forest succession on the best sites eventually leads to a substantial decline in potential productivity, is clearly important for those who wish to manage for timber as well as for wildlife conservation.

I also mention these examples as an indication of future potential. The work you have undertaken here at the University of Wisconsin Arboretum can provide an example for others to follow worldwide. Graduates of this university are obtaining a training, based on accumulated recorded experience of the plant communities within your Arboretum, which is gaining in value every year. Because this work has worldwide applicability, your students must be encouraged to think big, for their developing skills are at a premium in a world where man is so often in disequilibrium with nature.

Early prairie burning experiments, Aldo Leopold second from left — mid-1940s

It is particularly refreshing, too, to see a university institution that is planning for the future by supporting a dynamic program for children. We have been through a period when the importance of that discipline which comes from careful observation in natural history has been undervalued. This discipline must come through love, and you have here an extraordinary resource for kindling the love of nature in the young. Children see nature in ways both different from, and refreshing to, their parents. When I lived with my family in Borneo, my wife and I often used to take walks with our three young children in a rain forest near our home. I would always be staring up at the branches overhead, in search of flowers or fruits, or watching the behaviour of pollinators and frugivores. Constantly, though, the children would tug me away to observe bizarre fungi, a giant millipede, or the delicate filigree of a fallen leaf reduced to its vascular skeleton. These astute observations of detail lead on, through the sharpening of curiosity, to that enthusiasm and relentless need for the right answer that make a good scientist — and a fearless defender of our way of life.

To me, horticultural plantings such as the Longenecker Gardens act as a stimulant to such curiosity for the adult public as well as the young. More particularly, they provide a familiar introduction to nature for the city dweller, who may at first be comfortable only with tamed nature. The gardens also provide a facility for evaluating and improving through breeding new plants for our gardens, city streets and parks. The nursery industry, captive to popular demand, has over the decades excelled in the breeding of lurid monsters, scentless as plastic tulips, to jar the eyes with their clashing "riot of color." It is shocking that we allow our young to view such obscenity! Here, in a more independent setting, you can instead concentrate on ameliorating the ever-present problems of disease resistance. As important, though still underemphasized by horticulturists, you can breed plants to encourage wildlife in our cities: butterflies and moths require scented flowers, and birds need mellow fruitfulness.

It is our responsibility to bring to our children, as a right, a sense of wonder at the beauty of the natural world, and an intolerance for the shabbiness and ugliness of much of the world that we are creating.

These childhood experiences are indelible. This contribution may in the end be the most lasting that you will make. ■

Peter Shaw Ashton is the director of Harvard University's Arnold Arboretum.

CCC camp — the barracks during one of the long winters of the 1930s

Progress Reports

The Plant Communities

by Grant Cottam

You have heard the words Aldo Leopold spoke at the dedication of the Arboretum fifty years ago. His plan was to turn these acres into an example of what Dane County looked like before the coming of European civilization. It was a grand plan, a stroke of genius. But Leopold showed remarkable insight in describing the difficulties of this endeavor, though even he underestimated its complexities. Even the most astute biologist could not foresee all the problems, and the Arboretum Committee was well supplied with astute biologists, notably Leopold, Norman Fassett and, later, John T. Curtis. These men were giants in their fields. They enjoyed excellent reputations at the time they were working, and even now, a quarter of a century after the last of them died, they are still viewed with reverence and awe. The science of ecology was still in its infancy in 1934, and, while it was relatively easy to decide what communities should be represented, it was impossible to say exactly what plants and animals these communities should include. The classic studies of Wisconsin's vegetation carried out by Curtis and his students were, therefore, a critical first step in development of the Arboretum. And as data from these studies accumulated, Curtis used this information in establishing the Arboretum. Yet today that job is

The lilac beds shortly after planting began in 1935

Tree planting by muscle power — late 1930s

still far from complete. Leopold estimated that it would take fifty years to accomplish the task, and here we are — fifty years later. In this case, Leopold, astute though he was, was off on his timing. Far closer to the truth, so far as the time it takes to establish a prairie, was the man who actually directed the work, Dr. Theodore Sperry. His guess was, "roughly... a thousand years."

So we are not yet finished. In fact, there are some communities where we have barely begun. But this year is a milestone, and it is time to evaluate our progress. There have been some outstanding successes, some partial successes, and some near failures. Even the communities already present in the Arboretum at the time of its establishment have had to adjust to the various pressures generated by increasing urbanization of surrounding areas, and not all of these are in as good condition as they were forty years ago. What follows is an assessment of the success we have enjoyed. It is a subjective evaluation. Other people would make a different assessment.

The Arboretum's most outstanding success in community establishment has been its prairies. When we have a good summer the big bluestem grass is 10 feet high, the baptisia tremendous, and dozens of other species delight the eye. Unfortunately, there are problems. Some of the weeds are doing wonderfully, too — especially the sweet clovers. This last unhappy fact points up the

The outdoor laboratory

Wingra Woods in the 1950s

most serious management problem still existing on our prairies: Curtis Prairie was a pasture before it was established; Greene Prairie was a cornfield. Both contained a rich endowment of agricultural weeds, and it has been much more difficult to get rid of the weeds than it has been to establish the prairie species. The result has been that these prairies are richer in species than almost any other area in Wisconsin. Most of the appropriate prairie plants are there. But most of the weeds are also still there, and the most widely distributed plant on the prairies is still Kentucky bluegrass. This nonnative appears to be perfectly at home in the prairies, not only in the Arboretum prairies, but in prairies all over the country — and there appears to be little hope of eradicating it.

There seems to be more hope of reducing the importance of sweet clover. Being a biennial, sweet clover lives only two years, producing seed the second year, and, since germination of its seeds is stimulated by fire, our practice of burning our prairies every other year may well have encouraged its propagation. Arboretum Ecologist Virginia Kline's experiment to determine the effect of several burning and mowing schedules on the success of the sweet clover and the vigor of prairie species has produced encouraging signs that some of the treatments are going to work. Wild parsnip and leafy spurge are two other serious weeds in our prairies, and no easy way of controlling them has yet been found. But in spite of these problems, the prairies are magnificent.

Wingra Woods — especially its northern part, facing Lake Wingra — has presented different problems. Since this was originally a natural forest growing in its proper climate, one might think it would have required no management. But at the time of its acquisition, this woods was pastured and consisted of the great red oaks and an understory of Kentucky bluegrass. It had been burned every spring to "green up" the grass for the cows, and the only natural thing about it was the trees. After the grazing and the fires stopped, there was rapid development of the understory. A great variety of shrubs — including a hybrid honeysuckle (*Lonicera X bella*) — appeared. The Arboretum Committee decided, since there were practically no tree seedlings and saplings in this woods, to give Mother Nature a boost and provide them. They decided to develop the north slope into a maple-beech-yellow birch-hemlock forest, which is a northern Wisconsin type.

The hemlocks have presented us with an interesting puzzle. They were planted as foot-tall seedlings, enclosed in wire cages to keep rabbits away, and all seemed to be well. Only they didn't grow. For ten years they just sat there. We seemed to have developed a natural bonsai hemlock. Then, about the middle of the 1960s, they took off, and now some of them are 20 feet tall and doing very well indeed. Overall, the planted trees, some of which are now fairly large, have completely changed the shrub layer in Wingra Woods. Their dense shade has killed the honeysuckles and most of the native shrubs as well. The herbaceous plants are mostly mesic forest species, and when the red oaks finally die, it looks as though we are going to have exactly the kind of forest the Arboretum Committee originally intended to create.

The Leopold Pine Forest has been considered one of the more successful Arboretum endeavors, but its resemblance to a northern pine forest is due almost entirely to the success of the pine trees. This forest was started in 1933 to represent the drier forests of northern Wisconsin, and there is no doubt that some of the pines succeeded. But attempts to develop an understory appropriate to a pine forest have met with little success. Numerous trips to the north were made, and truckloads of herbs and shrubs were brought in, but few of them became well established in the pines. There are a few exceptions. In areas where the overstory was removed and fences were erected for protection from animals, the understory plants did fairly well. And there are a few places outside these exclosures where a semblance of a normal understory exists. Former Arboretum Director Roger Anderson studied one of the plants typical of the pine forest understory, the starflower (*Trientalis borealis*), and concluded that moisture supply during the summer was probably the most important factor limiting its spread in the pines.

The original plan had been to plant the pines in an irregular pattern so that some of them would eventually shade out the smaller, more crowded ones, accomplishing a natural thinning. The pines were actually planted fairly regularly, however, and little natural thinning occurred as they grew. As a result, some of the

trees became severely overcrowded and unhealthy. The drought of 1976 resulted in very high mortality in many parts of the forest. Dr. Kline, with the help of the DNR forester, has marked over half of the existing trees for removal, and this thinning has been accomplished on about six acres of the fifty acres planted in the Leopold Pines and the Grady Tract. The thinning was very successful and completion of this task is imperative.

The northern lowland forests have not received the attention the upland forests have received, and success in establishing these communities has not been very great. The tamarack plantings have been most successful. These trees seem to transplant easily, and some fairly large ones were brought in and have grown well. Black spruce and white cedar have also been planted and are surviving. But no ecologist would claim that we have anything resembling real northern lowland forest communities in the Arboretum. The white cedar community looks like a deer yard, but probably the biggest disaster has been around Teal Pond, where a taxonomic error resulted in the planting of European alder (*Alnus glutinosa*) instead of the native species (*A. rugosa*). European alder grows very rapidly and gets much larger than the native alder. It also sprouts prolifically when cut, so that attempts to eradicate it have only resulted in a large increase in the number of stems. The fact that our most noxious woody weeds, the hybrid honeysuckle and buckthorn, thrive on moist sites adds to the problem, and large areas of the Arboretum have an almost impenetrable thicket of honeysuckle or buckthorn.

The juniper knoll just south of Gallistel Woods has also presented difficulties. Before the junipers were planted, a large amount of sand was deposited on this site in an attempt to provide the dry, nutrient-poor environment characteristic of juniper knolls. This has not been entirely successful, however, with the result that, while the junipers are doing well, many other plants are too, and the knoll has been overrun by unwanted species. Several Friends work parties have materially improved this situation. Fire management here would be difficult because of the flammability of the junipers.

Two probably overambitious attempts were made to establish in the Arboretum plant communities not native to Wisconsin. The first of these is the Ohio Valley hardwood planting in the southern part of Gallistel Woods. This was intended to represent the wet-mesic forests that grow farther south, and plantings of magnolia, sassafras, tulip tree, and a number of small trees and shrubs, including flowering dogwood and redbud, were made there. So far, the results have been disappointing. Many of the species have managed to survive, but have so far failed to establish an authentic sample of the Ohio Valley hardwood forest. It has been suggested that these nonnative species might do better if the oaks that tower over them were judiciously thinned. But the idea of destroying good native species in order to encourage a nonnative community is not an altogether attractive one.

The other nonnative community is even farther away from home here. This is the Rocky Mountain forest complex on the Grady Tract. Plans exist for developing a series of communities ranging from the very dry pinyon-juniper to the fairly mesic spruce-fir and lodgepole pine communities. The most successful of these plantings has been the ponderosa pines, and there are those who say it has been too successful because the pines are starting to block a very nice view of the city of Madison. The Douglas fir forest has been less successful, and many of the components of this forest complex have never been planted. In view of our notable lack of success in establishing an understory in the Leopold Pines, it would appear that it would be easier to move the Arboretum to Colorado than to establish a Rocky Mountain forest in Wisconsin.

The native communities that existed here when the Arboretum was established have also had their share of problems. The wooded areas have suffered the invasion of some weedy species, notably the ubiquitous honeysuckle and buckthorn (*Rhamnus cathartica*). Noe Woods is in the best shape, but its maintenance has required a lot of effort spent eradicating the honeysuckle and some Norway maples that managed to get established there. The sandy slopes above the Greene Prairie formerly supported an oak opening. This opening is now much smaller because the numerous young oaks there quickly became small trees after grazing stopped following acquisition of the land, and also because of a 1954 fire, which destroyed many of the large trees but apparently stimulated the

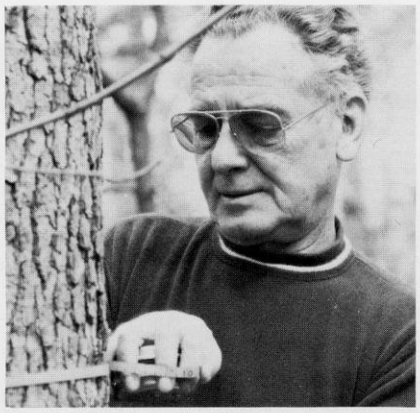
young ones. At present, most of the savanna oaks have died of oak wilt, and the center of the woods is a tangle of honeysuckle, blackberry, and thirty-year-old oaks. The most successful management tool in this kind of community is fire, but managing a forest with fire when the forest is adjacent to a residential development will require meticulous preparation. Another partial solution is the use of biological control. The oak wilt fungus that killed the large trees doesn't normally infect the small ones, but it will kill them if the young trees are properly and deliberately inoculated. Dr. Kline has used this technique on the Grady knoll, and has exterminated 10,000 oaks. The process is

Curtis Prairie about 1955

expensive in time and money, and by itself will not restore the savanna. Our experience in the Grady Tract oaks makes an important point: in the maintenance of plant communities, protection from disturbance alone is not enough. All communities have to be actively managed if they are to be maintained.

The marsh areas also are changing. Most important is Wingra Fen, a small area west of Wingra Woods. Fens are relatively rare communities, and this one was very nice, containing hundreds of small white ladyslippers (*Cypripedium candidum*). The problem here has been invasion by shrubs. For decades, mowing of the fen kept it open. But when the Arboretum acquired this property and the mowing stopped, the fen rapidly began to develop a shrubby cover and the orchids practically disappeared. Various combinations of burning and mowing have been tried to keep the fen open. One of the problems is that the old horse-drawn mowers could negotiate this wet area a lot better than our modern equipment can. A new buckthorn species, *Rhamnus frangula,* is also adding to our woes.

The general conclusion one must draw from a review of the successes and failures of the management efforts in our natural communities is that nothing comes easy. Biotic communities change from year to year, even from day to day in response to the weather, the interactions of the plants and animals they contain, and the disturbances imposed by too many people sometimes doing the wrong things. If there is such a thing as a perfect balance, it has not been achieved in the Arboretum. No one can expect these communities to stand still forever. Change is inevitable. The challenge now is to manage them with tender loving care as well as with a thorough knowledge of what they are and what they can become. ■



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Boreal forest

Animal Research

by Robert McCabe

Today we are indulging a retrospective look at the University Arboretum. As a benchmark we start with Aldo Leopold's ideas expressed in the summer of 1934 at the dedication of this outstanding appendage of our campus. I wonder whether we would be focusing on that presentation if *A Sand County Almanac* had not appeared to arouse the dormant environmentalists of the 1950s.

My assignment is to deal with the animal aspect of Arboretum activity. The earliest designation for the piece of geography on which we now stand was *University of Wisconsin Arboretum and Wildlife Refuge.* This was later, but not officially, reduced to *University Arboretum,* then to *Arboretum,* and finally in the vernacular to *The Arb.*

The wildlife program began during the CCC days when rabbits, woodcocks, waterfowl and songbirds were studied by an elite group among the camp corps guided by a staff biologist. I suspect it is easy to be an elitist in natural history when stone hauling and pond digging may be the major alternatives.

Unfortunately, many of the data gathered by the CCC boys never reached print. Most died in files marked "field study." I saw this crew in action only once, in 1939, but I was impressed with the skill and comprehension of these young men soon to become soldiers.

One cannot speak of Arboretum research, be it on plants or animals, without doffing one's hat to Charles Bunn, Professor of Law. He understood in the early 1940s that funds for research in natural resources were difficult to obtain from government in the face of the impending holocaust. He privately and without fanfare created a fund that made possible studies on plants and animals that were supported in no other way.

Among these early studies on animals was a fifteen-year investigation of the Arboretum pheasant population. Indeed there were two distinct populations in the early days of the Arboretum, one in the east marsh and one in the west marsh. The farmlands surrounding the Arboretum at that time helped to support these aggregations. The research showed that about 70 percent of the young born in any one year are lost by the second winter, that the average life span of a cock pheasant in an unhunted area is 1.5 years, and that the hens average 2.5 years.

A woodcock breeding population has been counted each spring for the past thirty-five years, both as a teaching and a research exercise. The average number of breeding birds per year is about eighteen. The areas used as display sites for male woodcocks change slowly, but are predominantly fen areas with scattered brush that tend to be invaded by undesirable exotic plants such as Tatarian honeysuckle and buckthorn.

For 16 years (1948-1963) the rabbits of the Arboretum were controlled and research data obtained by a hunting group that removed animals weekly during the winter months. The age ratio among the shot sample was roughly 75-80 percent young each year, indicating rapid population turnover. The number of animals taken was a function of population numbers and not of differential hunting pressure.

Deer have been recorded for the Arboretum for at least sixty years, but it was not until the 1960s that the number of deer became burdensome to the plant communities within the Arboretum. After experimenting with several removal schemes to reduce the herd, the current program of shooting and live capture has been effective in controlling deer numbers without eliminating all deer. Unless a protective fence discourages deer from entering the Arboretum, particularly from the southern border, the control program will continue to be necessary to protect desirable vegetation.

An outstanding single species monograph was based on research in the HoNeeUm Pond area. The American robin was the species involved. Several of the more interesting research findings were that there is apparently no relationship between nest success and nest density; the annual production of one pair is five or six young, and those young suffer 75 percent mortality before migrating.

Along McCaffrey Drive in the area where the road skirts Lake Wingra, there is a small cattail marsh. It is here that several projects on red-wing blackbirds have been undertaken.

In the Gardner Marsh area small mammal habitats were partitioned by metal barriers and the number of animals in the various compartments was regulated to examine the effects of population pressures. Similar populations of mice were studied in mechanically partitioned habitats in one of the old CCC barracks. In each case, in the field

as well as in the laboratory, excess numbers interfered with reproduction and survival.

Various songbirds have been subjects of long term investigation. These have included house wrens, tree swallows, willow flycatchers, and catbirds. In the latter case the pair relationships among individually marked birds showed that pair bonds often remained intact for long periods. In one case, for example, a female was mated with a male for six years. Also those pairs that returned to the Arboretum came to the same half of a 14-acre study site in the headquarters area. Some returned to the same bush used in the previous year or years.

During the early 1940s the Arboretum, in cooperation with the Illinois Natural Survey, conducted an experiment to bring back a breeding population of wood ducks to the Lake Wingra watershed. These ducks had not bred in the area for more than twenty years. The ducks transplanted were raised as ducklings at the Arboretum. The effort was successful, and today wood ducks are regular breeders in the Madison area. The first observation of a banded duck that was released at the Gorham Spring (Stevens Ponds) was in the center of the Arboretum. A banded female was later captured in the Forest Hill Cemetery.

As an ornithological base for bird study, an account of the *Avifauna of the Arboretum* was compiled in 1936 and is now used to assess changes in numbers and species of birds using the Arboretum.

A study of mink was conducted to learn something of mink numbers and mink behavior in the wild. Animals were live-trapped, marked and released. In the process a new nontag-nonmutilation method of marking was discovered. The stable, white pattern on the ventral pelage of this animal provided an individual marker. Drawings of these patterns served as absolute identification markings for mink that were recaptured. Male mink were found to have a winter range larger than habitat within the Arboretum, while the female had a range only about a tenth as large as the male's.

Some of the pioneer work on the censusing of songbirds was conducted at the Arboretum. These techniques have been incorporated in census methods now used throughout the United States.

In addition to bird and mammal studies, the ponds in Gardner Marsh were used as sites for fish research. Insect investigations have also taken place from time to time in the Arboretum.

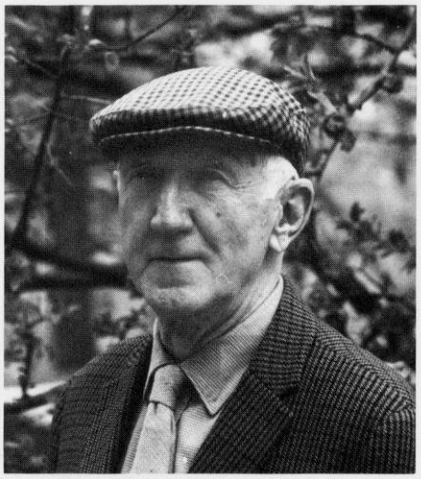
The initial purpose of the Arboretum as I know it was to serve as a wildlife refuge as well as an arboretum. The arboretum concept was not to be a collection of exotic or cultivated plants, but an area in which examples of the native vegetation were to be restored and preserved in ecological units for research and education. A secondary hope was

Gardner Marsh

that these synthetic plant communities would also attract ecologically appropriate species of birds and mammals. This has not occurred extensively, largely because the communities are too small. I have, for example, a record of an upland plover (sandpiper) using the prairie briefly in one year only. In at least two years a clay-colored sparrow bred in the jackpine area, but no resident population resulted. In many cases there has been a decline in certain species as a result of our efforts to maintain the Arboretum. Bluebirds, tree swallows, willow flycatchers and catbirds are examples of birds that have declined. The Franklin's ground squirrel population that once thrived in the area of the McKay Center has disappeared. Only white-tailed deer have increased.

Human use and the take-over by exotic vegetation have regulated the animal use of the Arboretum far more than did the deliberate development of plant communities.

Expectation encourages prediction. The aggregate wisdom of the early Arboretum organizers predicted that we could learn still uncovered truths by having a land laboratory as part of our university facility. To some extent the expectation exceeded the results, but not totally. We did learn many things about plants and animals that made a contribution to science and to learning. If we can prevent deterioration of the laboriously created plant communities that are in fact the Arboretum, our children can be as proud fifty years from now as we are today. ■



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Longenecker Gardens

The Longenecker Horticultural Gardens

by Edward R. Hasselkus

The first lilac was planted on Good Friday 1935. This marked the beginning of the Arboretum's horticultural plantings for the display and testing of trees and shrubs for Wisconsin and midwestern conditions. Executive Director and Professor G. William Longenecker, landscape architect and horticulturist, designed and executed these plantings with special emphasis on lilacs. Funds for planting stock were generously supplied by the Madison Garden Club. During the '30s, the Civilian Conservation Corps constructed maintenance buildings, roads, stone walls and fences, and provided the labor for planting and maintaining the new plantings.

A flowering crabapple collection was begun in 1942 with the financial assistance of Madison's Westside Garden Club. Their support continues to the present.

Highlights of the '50s included the development of the viburnum collection along Manitou Way and the Shrub Display Garden. A master plan of the remainder of the horticultural gardens was prepared by Longenecker in 1957. He skillfully created pleasing vistas and a series of enclosed spaces intended to lure the visitor from one area into another. About the same time a young man named Eugene Moran began his career here at the Arboretum. He and his crews have worked diligently through the years to ensure the success of this venture. William G. McKay's bequests to the Arboretum and the Department of Horticulture not only provided a vital facility, but provides continuing support for the evaluation of landscape plants. Since 1954 we have participated in a USDA Regional Plant Introduction project in which more than 475 taxa of landscape plants have been cooperatively evaluated in twelve north-central states.

During the '60s the Tree Display area was developed. Among the first plantings was a collection of North American oaks received from the Michaux Quercetum of the Morris Arboretum in Philadelphia. The Autumn Purple white ash was introduced into the nursery industry by Longenecker. In June 1967, the horticultural plantings were dedicated as the G. William Longenecker Horticultural Gardens in honor of their creator.

Progress during the '70s included the development of the Pinetum and the construction of the McKay Center. Printed guides to the lilac, crabapple and viburnum collections were prepared by Ken Wood. All of the plants in the Longenecker Gardens were labelled with permanent record labels for the first time. An explosion of the Arboretum's deer population resulted in massive damage to valuable plants from browse and antler rubbing. John C. Van Camp, of Rockford, Illinois, made a significant contribution of trees and funds for the development of the Tree Display area. The Royal Botanical Garden, Hamilton, Ontario, helped update the "geriatric" lilac collection by providing rooted cuttings from their world famous collection. Students began to discover the Longenecker Gardens in larger numbers as enrollment soared in dendrology and landscape plants courses.

So far in the decade of the '80s, evaluations of the ground cover junipers and the potentillas have been published. Whitespire Japanese birch and Wisconsin creeping juniper have been introduced to the nursery industry as new cultivars.

As I look back over the past five decades, I feel we have reached or exceeded the visions of our founders. The Longenecker Horticultural Gardens has joined the ranks of the respected horticultural arboreta of North America. Longenecker's master plan assured that the plant collections provided all visitors with an esthetic experience, while at the same time providing the serious student or researcher with an educational opportunity.

In forty-nine years, the lilac plantings have grown to a total of more than 300 taxa — certainly one of the top lilac collections in North America. Though not the largest, the flowering crabapple collection is among the most up-to-date and the most studied in the United States. In the early years, planting stock was acquired from any convenient nursery source, with little or no knowledge

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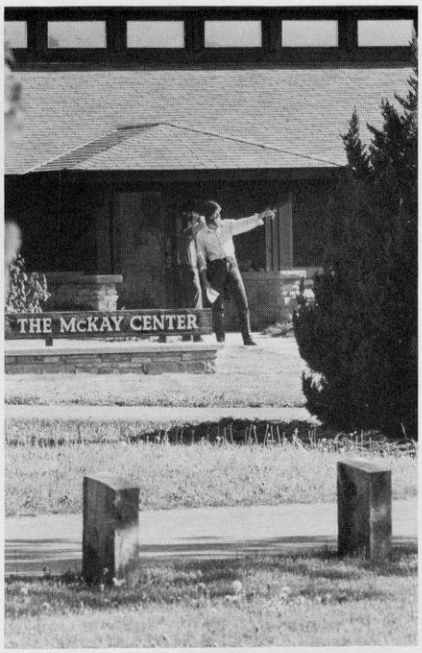
of its seed origin. More recently the Longenecker Gardens has been the beneficiary of plant explorations, both domestic and foreign, sponsored by the USDA and other arboreta and botanical gardens. The high priority placed on the accession of plants of documented origin will ensure that the collections of the Longenecker Horticultural Gardens are of scientific value to researchers both now and for the next fifty years. ■

McKay Center



A Perspective
The Arboretum at 50

by William R. Jordan III

I first read Professor Leopold's dedication address in 1977, shortly after beginning work here at the Arboretum, when I came across a copy in the UW Archives, and I have been thinking about it ever since. It seems to me that it is much more than a historic curiosity. It is a prophetic statement and a charter for the development of a new kind of enterprise — not just a new kind of arboretum, but a new way of thinking about and dealing with nature. I think it has major implications, not only for the Arboretum itself or the University of Wisconsin, but for technological societies everywhere. Yet recognition of this has been surprisingly slow in coming. Even today, it seems to me, its full import has not been fully grasped by scientists generally, by many environmentalists, or by the general public. For evidence of this you have only to consider that in all that has been written about Leopold during the last thirty-five years, no one has identified his participation in the development of the UW Arboretum and the ideas behind it as one of his most novel and far-reaching contributions to the modern conservation movement of which he was both prophet and pioneer.

The Arboretum, it seems, represented an idea that was far — perhaps too far — ahead of its time in 1934. Where did this idea come from? What did it mean to Leopold and his audience? And what does it mean to us as we look back over our first half century and look forward to our second?

It seems to me that some of the major influences that shaped the Arboretum's early course are obvious. The first was the great local interest early in this century in creating parks for the rapidly growing City of Madison. The first efforts to set the Arboretum land aside as open space were in fact aimed at creation of a park. While that effort failed, and the Arboretum is explicitly not a park today, this influence lives on in public use and appreciation of the Arboretum — and even more significantly in the powerful esthetic and historical motives that underlay the novel development plan for the Arboretum, so clearly evident in Professor Leopold's dedication address.

Nevertheless, the park movement is part of the prehistory of the Arboretum, not its history. The history began with the successful drive for the first acquisition of land in the early 1930s, the decade of dust and depression, and it seems clear in retrospect, if it was not clear then, that the Arboretum is a product of that time in several specific ways.

First, it was the low prices of the Depression era that made it possible to acquire land on the scale conceived by Michael Olbrich and Joseph Jackson, the early leaders of the project — largely with money provided by a few public-spirited benefactors such as Louis Gardner. Indeed, the acquisition of land for the Arboretum coincided almost exactly with the period of economic depression. It began in the very depths of the Depression in 1932, and was 95 percent complete by 1941. Far from being paradoxical, this reflected a national pattern, as farms failed due to economic hard times and

private land passed into public ownership.

So the land itself was a gift of the Depression. And so was the labor needed to develop it. Looking back it is clear that, despite their great energy and enthusiasm, the early leaders of the Arboretum project could not have realized their ambitious plans without the help of the Civilian Conservation Corps. The boys of CCC Company 2670 provided a labor force 200 strong from 1935 through 1941, and that made it possible to act on an idea that was ahead of its time and otherwise might have waited another fifty years for realization. This was the second gift of the Depression to the Arboretum. And these two circumstances — cheap land and free labor — make it clear why the Arboretum happened when it did, and why nothing quite like it has been carried out since on so large a scale.

Remarkable as this story is, however, it was neither the acquisition of land nor its physical development that distinguished the UW Arboretum from similar institutions elsewhere. What set this Arboretum apart was the idea behind it — the idea Professor Leopold outlined in his dedication address. And this too was in many ways clearly a reflection of the times, in this case not so much the economic hardship of the Depression as the related ecological disasters of the Dust Bowl and deforestation.

To the few environmentalists of the time, the droughts and catastrophic dust storms of the 1930s were unmistakable evidence that something had gone dramatically awry in the relationship between man and the environment in the heartland of the North American continent. While the epicenter of the dusted-out country was farther south and west in Kansas and Oklahoma, drought conditions prevailed in Wisconsin as well, and in fact one of the largest storms of the period swept across the upper Midwest in early May 1934, just five weeks before the dedication of the Arboretum.

At the same time a century of logging was coming to an end in the forested regions of the upper Great Lakes states, leaving much of northern Wisconsin an ecological wasteland, denuded of trees, economically depressed and visited by frequently catastrophic fires that burned through the slash left by the loggers.

Madison stood on an ecologically privileged isthmus between these two disaster areas, but it is clear that the novel plan for the Arboretum's development was at least in part an imaginative response to these conditions. Certainly the idea Leopold described in 1934 reflected the general thinking and preoccupations of the time. Indeed, the nation responded to the Dust Bowl and widespread deforestation with the creation of a variety of New Deal programs such as the Soil Conservation Service, the WPA, and the CCC. An underlying theme of all these early conservation programs was revegetation and the healing of degraded land. But it was apparently only here at the UW Arboretum that those committed to revegetation took on — in fact dreamed up for themselves — the added task of the actual restoration of authentic replicas of whole native *communities.*

And so, in a single bold and imaginative leap, inspired, we gather from Leopold's speech, by a complex mixture of scientific, environmental, historical, and esthetic considerations, we have the first systematic plan anywhere to put nature back together again — *whole.*

This was a new idea at the time, one that had been explored by only a few isolated people, like Elzeard Bouffier, of France. While it borrowed from a variety of pursuits ranging from horticulture and forestry to natural area management and landscape architecture, it was novel in its acceptance of the natural community as a model or objective, combined with a commitment to reach that objective by a deliberate, active, manipulative process borrowed essentially from agriculture.

Consider what this means. Shortly after Leopold gave his address a few UW students began the first experiments that led to restoration of tallgrass prairie on

Leopold pines

the old pasture south of the administration area. The process was unprepossessing, but remarkable in its implications nevertheless. For the first time since the dawn of agriculture 10,000 years ago, human beings were practicing a new kind of agriculture — an agriculture committed not to taking nature apart and simplifying it, but to putting it back together bit by bit and plant by plant. The result, Curtis Prairie, is spectacular to look at. But it is historically significant as the world's oldest scientifically restored ecological community — the result of one of the earliest attempts anywhere to replant precisely and systematically in imitation of nature.

This, I think, is a tremendous thing. Why has it not been more widely recognized?

It seems to me there are several reasons for this. One is simply that restoration is by nature inconspicuous. By design, the products of the restorationist's efforts resemble and blend into nature. They are easily overlooked or mistaken for natural communities. Then, too, there is a sense, only partly correct, that restoration is a nontechnology, and that what the restorationist does would be done anyway by nature alone — more slowly perhaps, but probably better.

At the same time, restoration has been slow to capture the imagination of environmentalists. Necessarily preoccupied with the need to preserve the natural landscape, they have tended to stress the fragility and irreplaceability of ecological communities, and to resist the suggestion that, with effort and skill, it is possible to restore some communities under certain conditions.

Finally, with some notable exceptions, ecologists have tended to prefer natural communities to restored ones as objects of research, though recently a number of eminent scientists have pointed to the great value of studying disturbed communities, and to the lessons that may be learned from the process of restoration itself. Fortunately, there are now signs of growing interest among ecologists in restoration as both a challenge and a research opportunity.

Whatever the reasons, this idea of the imitation of nature has been an inconspicuous one up to now, and it is only during the past couple of decades that it has begun to influence events off-campus, as it were, in industry, environmental planning and management, and so forth.

Now at last the implications of the ideas outlined by Professor Leopold in 1934 are beginning to be widely recognized, though few people recognize the Arboretum as the place of their origin and their earliest proving ground.

I think of these implications in several categories — practical, scientific or conceptual, and psychological or even religious.

Of these, the practical implications are the most obvious. The idea here — and Leopold himself made extensive use of the metaphor — is that restoration is the ecologist's version of healing — it is medicine practiced at the level of the community or the ecosystem rather than the organism. Obviously this is a matter of immense importance, and becomes even more so as the scars resulting from development and the exploitation of nature widen. The conspicuous example is mine reclamation. British Ecologist Anthony Bradshaw estimates that during the decade between 1965 and 1974 more than a million acres were newly disrupted by surface and strip mining in the United States alone. Ultimately, this will have to be reclaimed. And the development of practical, ecologically sophisticated restoration techniques is going to play a critical role in ensuring that at least some of this reclamation takes the form of high quality community restoration, exactly like that pioneered at the Arboretum during the past fifty years.

In a similar way, the Arboretum presents a model and a proving ground for environmental activities as diverse as landscape architecture, forestry, park and natural area management, and even some forms of agriculture. In all these areas the benefits of restoration in conservation of habitat, in preservation of rare species, and in savings of water and materials, and of energy in the form of labor, fuel, fertilizer and pesticides, are incalculable.

All this suggests the significance of what must have seemed a half century ago like an academic pastime, or a federal make-work project with little practical importance in the "real" world. In fact, the Arboretum idea was eminently practical from the beginning. Inspired partly by alarm at the consequences of environmental abuse, it was the response of Leopold and his colleagues to a real national emergency. For Leopold in particular, it was the other side — the more active and management-

oriented side — of the ideas he developed in *A Sand County Almanac,* written during the same years he was playing a leadership role in the development of the Arboretum. If in the *Almanac* Leopold would mourn the passing of the prairies, at the Arboretum he would participate in a pioneering attempt to bring back a bit of the prairie.

And what was truly practical and responsive then is, if anything, even more pertinent and practical today. The Dust Bowl, remember, is not over. The conditions that produced it still exist. The world's deserts are expanding. Deforestation has not ended, it has simply been exported from Wisconsin to Alaska and the great tropical rain forests. The need for environmental healing, urgent in 1934, has become even more so since. Furthermore, the conservation — even the preservation — of native communities requires active management based on ecological understanding. This must be the single greatest lesson of the Arboretum experiment so far. And it suggests an exciting future for our restoration and management research efforts.

To some extent, of course, the leadership in the development of restoration as an environmental technology has passed from the Arboretum to other organizations, notably the reclamation industry, during recent decades. Where we retain a position of preeminence, however, is in the development and refinement of techniques for the restoration and management of native communities of the highest ecological quality, and even more distinctively, in the development of restoration as a research technique, a task that challenges fundamental ideas about ecological communities and ecosystems, raising basic questions and providing opportunities for testing fundamental hypotheses about them.

This is an idea that was hinted at by both Leopold and John Curtis, and that in fact underlay much of Curtis' own work at the Arboretum during the 1940s and '50s. Recently it has taken the form of the idea of restoration ecology, which will be developed in detail at a symposium the Arboretum will sponsor this fall. The key idea here is that restoration is conceptually related to methods traditionally used in the laboratory to study the structure and dynamics of communities experimentally — even synthetically — by assembling them bit by bit. To the extent this linking of research traditions proves fruitful, this discussion will represent a step toward the development of restoration as both a science and an art of ecological healing.

Finally, it seems to me that restoration has psychological — even religious — implications that may well be its most significant and its profoundest contribution to the developing relationship between human beings and their environment. Environmental thinking has recently reflected a degree of polarization between two ways of thinking about and dealing with the environment. The first draws from a tradition of responsible stewardship of the land typified by Benedictine ideals of land management. The other emphasizes a more passive relationship, stressing awareness, appreciation, and letting things be, and has at times been identified as an attitude more in the Franciscan tradition.

The reason I find restoration, as pioneered at the Arboretum, so appealing, so healthy, and so promising a development in our relationship with nature is that it brings these two attitudes or sides of human nature into harmony. Like more traditional forms of agriculture, ecological restoration deals with nature by manipulating it, and is in this sense active and even aggressive in its relationship with nature. Unlike traditional agriculture, however, restoration does not manipulate arbitrarily, seeking to remodel nature in a fashion that prefigures machine production. Instead it accepts nature itself as a model and proceeds by attempting to imitate nature in the most meticulous and fullest sense.

This, it seems to me, places the restorationist in an extremely attractive position — active as a shaper of the landscape, and yet attentive to nature and receptive to its subtlest secrets and most intricate relationships.

The restorationist is in this sense, like an artist *and* a scientist, impelled to look closer, drawn into lively curiosity, drawn to test ideas by his or her commitment to the imitation of nature.

All this, it seems to me, is something momentous in the sometimes troubled history of our relationship with nature. All of it is there in this remarkable piece of writing by Aldo Leopold. The idea he outlined in 1934 has provided the basis for fifty exciting years at the Arboretum. And I think that it is becoming clear that it is good for another fifty years at the very least. ■

Some Key Events in the History of the Arboretum

1853 Scientist Increase Lapham calls for creation of an arboretum for the University of Wisconsin.

1911 Landscape Architect John Nolen proposes expansion of Vilas Park to the southern shore of Lake Wingra and development of a UW arboretum around University Bay.

1922 The Lake Forest Company declares bankruptcy, ending a decade-long attempt to develop the wetlands east of Lake Wingra.

1927 Attorney and UW Regent Michael Olbrich secures the Regents' approval for a plan to begin arboretum development around Lake Wingra.

1929 Olbrich dies, leaving the arboretum project to languish through the first two years of the Depression.

1931 Arboretum idea revived by Colonel Joseph W. Jackson.

1932 Acquisition of the first Arboretum land, the 245-acre Nelson farm in the area now occupied by the Longenecker Gardens, the administration area, and part of Curtis Prairie.

1933 Planting of Leopold Pines begun.
Aldo Leopold joins UW faculty as country's first professor of game management.

1934 Formal dedication in Nelson barn, Sunday, June 17.
Establishment of Wisconsin Emergency Relief Administration transient camp; construction of camp buildings begun near present-day administration area.

1935 First contingent of CCC workers arrives at Camp Madison.
Prairie restoration experiments begun on site of Curtis Prairie.
First lilacs planted in horticultural gardens.

1936 Acquisition of the east marsh made possible by funds provided by Louis Gardner.

1940-2 Land acquisitions, including purchase of the 200-acre Grady Tract, bring the Arboretum to 1100 acres, establishing nearly its present outline and size of 1280 acres.

1941 CCC camp closes in November, just weeks before Pearl Harbor.

1945-51 Botanist Henry Greene carries out early stages in restoration of Greene Prairie. Forest restoration work continues under supervision of John Curtis, with maple forest species underplanted in Wingra and Gallistel Woods.

1948 Publication of John Curtis and Max Partch's paper on the effects of fire on prairie vegetation, based on pioneering experiments on Curtis Prairie.
Aldo Leopold dies fighting a brush fire near his sand county farm.

1953 Walt Disney crew films burning of Curtis Prairie for documentary "The Vanishing Prairie."

1959 Publication of John Curtis' classic *Vegetation of Wisconsin,* based in part on work at the Arboretum.

1962 Friends of the Arboretum formed, carrying out an idea proposed by Curtis just before his death in 1961.

1966 Friends establish first formal tour program for the Arboretum.

1977 Opening of McKay Center marks Arboretum's growing awareness of its mission to the public.

1981 Arboretum launches *Restoration & Management Notes,* the first publication to deal exclusively with the restoration of high quality ecological communities.

Our First 50 Years

The University of Wisconsin-Madison Arboretum 1934-1984

A commemorative booklet

Publication of this booklet has been made possible by a gift in memory of Booth Lenore Courtenay.

Published by the University of Wisconsin Arboretum, 1207 Seminole Highway, Madison, WI 53711

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William R. Jordan III, Editor

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EARTHKEEPING

at the University of Wisconsin–Madison Arboretum

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Earthkeeping Applies Aldo Leopold's "Land Ethic" to Our Lives

In *A Sand County Almanac*, Aldo Leopold, the noted naturalist, wrote about an ethic that would go beyond concepts governing human relations to include the natural world ("the land"). This land ethic recognizes that just as people live in communities governed by laws and ethical behavior, they are also a part of the natural community with its own natural laws.

Restoration can help us understand the natural communities that created the world we live in today. In the midwest, the prairie community created the rich soils we now use for agriculture. By destroying this community, we remove the builder of the soil and also suffer extensive losses of soil. Studying prairies and the effect on the soil of their restoration helps us better understand how to create a truly healthy relationship with the earth that sustains us.

"When we see the land as a community to which we belong, we may begin to use it with love and respect."

—Aldo Leopold

Ecological Restoration—Earthkeeping's Focus for Action

SOME OF NORTH AMERICA'S ECOSYSTEMS

- **Grasslands**
  - Prairie
  - Savanna
- **Deciduous Forest**
- **Coniferous Forest**
- **Desert**
- **Wetlands**
  - Salt Marsh
  - Fresh Water Marsh
  - River and Stream
  - Swamp
  - Bog
- **Alpine Meadow**
- **Boreal Forest**

A natural, biotic community is a complex, interactive system of living things, influenced by non-living elements such as geology, hydrology, and climate. Prior to pioneer settlement in North America, there was a rich diversity of ecosystems, each adapted to the conditions of its particular region.

European settlement brought substantial change to the landscape. Acres of corn and wheat replaced native ecosystems. Cities occupied areas once covered by forest, prairie, or savanna. Waterways were altered and many wetlands drained. Human population pressures such as these have led to a decline of natural biodiversity all over the world.

Ecological restoration grew out of the recognition that biological diversity is essential to the health of the planet, and thus to the health of our own species, since we depend upon the land for our survival.

Restoration of native biotic communities benefits the environment by improving local biodiversity. Natural biotic communities are more stable, and need less fertilizer, fuels, and pesticides than landscapes maintained in an artificial state, such as mowed lawns or gardens of annual plants.

Preservation and Restoration

The first step in fostering biodiversity is to save remaining native communities, since it is in the context of a complete community that individual species can best survive, and their genes be preserved. But preservation alone is not enough, since so much of the natural biota has already been destroyed.

By using remnant native communities as models, restorationists seek to re-establish functioning communities of plants and animals. In some cases, restorations are used as buffers around preserved areas. In other cases, they stand alone as efforts to bring back natural communities where they were eliminated.

Restoration Projects, Large and Small

Large-scale projects often produce greater natural benefits than small ones because natural processes, such as fire, can occur and more species can be included, such as large herbivores and predators.

A small project can be very useful, however, especially if it supplies a species's limiting factor, such as a host plant needed by butterflies, or if it serves as a refuge for genetic diversity. Small projects also offer the opportunity for anyone to get involved and learn about native plants and animals.

Effective Environmental Education

Earthkeeping restorations are fertile ground for more effective environmental education. Students do something visible, tangible, and beneficial for the land, and in so doing, they discover that they can make a positive change in the relationship between people and the earth.

Starting an Earthkeeping Project

Set clear goals for your project. Create a plan that can be implemented in stages. Involve other people from the start. At schools, involve students, all staff, and parents. If you are a homeowner, let neighbors know you are trying something different and encourage them to join in—for an even larger positive impact on the local environment.

Choosing a Native Community

Learn the ecology of both the native, natural landscape and the site you wish to change. Choose a native community that matches your site's potential, one that is similar in exposure to sun, soil, and water-holding capacity of the soil.

Choose woodland if you have native tree cover or other shade on the site. Tree species and density will help determine the type of woods. Select savanna if you have partial shade provided by open-grown oak trees. A wetland is suitable where land is at least seasonally wet. In the southern half of Wisconsin, choose prairie or savanna for areas in full sun.

For example, you may have an open area with at least 12 hours of full sun in the summer. From examining surveyors' records, you find out that prior to settlement it was savanna, but all the trees have since died or been removed. Because it is rare, you may still choose to recreate savanna, although many of the savanna's species cannot be included until newly planted trees create enough shade. Or you may plant a prairie because all the shade is now gone, making the site suitable for prairie species. In addition, prairie seeds are more readily available than savanna seeds.

Formulating a Plan

A basic plan includes: site analysis; community selection; removal of alien or weedy species; preparation of the site; acquiring of native plants and animals; planting; and managing. Many *non-native* species will create problems for you when you are trying to increase the diversity of *native* plants on your site. These must be removed to allow the native species to re-establish themselves.

Though very easy to start, no project will ever be "done"— the need for improvement and increased diversity always offers more opportunities.

How Long Does It Take to Get Started?

Planning, site study and preparing the ground often take a full year. During that time, collecting seed provides wonderful experiences before planting. Seed or plants may also be purchased. Seed is usually planted in the spring following the year of preparation.

Start small; your return will come sooner and be proportionately greater. Teachers can spread the project out so different grades may accomplish specific steps and future classes experience restoration.

Few prairie species will bloom in the first two years of planting from seed, and you can expect to wait as many as four or five years for other species to flower. Many woodland wildflowers also take many years to flower when planted from seed.

EARTHKEEPING IS FOR STUDENTS

- **Hands-on learning.**
- **Goal-oriented, real-life problem solving.**
- **The personal connection to the environment needed for increased motivation and action.**
- **A new way of looking at the world and their behavior towards it.**
- **Real work with real results that builds interest and self-esteem.**

Detailed information on starting an earthkeeping project is contained in the Arboreum publication, Prairie Restoration for Wisconsin Schools.

Contact the Arboretum for information on this publication, workshops, classes, tours, and other materials.

EARTHKEEPING IS FOR EDUCATORS

- **A way to lead students through example—actually taking care of the environment, not just talking about it.**
- **An opportunity to learn/teach about long-term processes, as well as products.**
- **An arena to explore study of environment as a possible basis for restructuring curriculum.**
- **Creates sites useful for teaching now and into the future.**
- **Enhances teaching of the scientific method.**
- **Suitable for multi-disciplinary thematic and whole language instruction, enhancing teaching of all subjects.**
- **Promotes closer work among peers and potential net-working throughout the state.**
- **Establishes community connections through cooperative projects and common interests.**
- **Fulfills the Wisconsin Department of Public Instruction mandate for effective environmental education.**

Earthkeeping at Your School

Teachers and students take responsibility for a small corner of the school-yard—not the whole lawn, but enough for an experiment. Is it possible to replace that piece of lawn or dirt with plants and animals native to the area?

They explore and compare the schoolyard and a nearby native community, perhaps a remnant of prairie. Both are very sunny spots with similar soil. Hands-on activities show the diversity of grasses, flowers, and critters that call the prairie home. By comparison, the lawn has few plants and animals and little aesthetic change through the seasons. The group decides it will try recreating a prairie in place of some lawn.

Everyone pitches in to map, measure, count plants, create plans, and write stories to inform parents and other students about the project. Students cover bluegrass with mulch to prepare a site, gather prairie seeds, tell and hear stories about prairie pioneers, plant, weed, and celebrate the return of one tiny piece of land to prairie.

Their scientific learning grows, too, and local history comes alive as they develop a sense of place. The art classes help with posters, t-shirts, and other projects which explore the prairie in a different way. Students use art to advertise, explain, and raise funds for the project. In Phy-ed, students learn games played by pioneer and Native American children. The music teacher finds songs and ballads from prairie settlement times. All grades can become involved, and students can look forward to the prairie activities they will do throughout coming years.

The Earthkeeping Program at theUW Arboretum

For more information on the Arboretum's programs and publications, contact the the McKay Visitors' Center, (608) 263-7888.

At the University of Wisconsin–Madison Arboretum we help citizens, teachers, and students restore the local environment while they learn about the native biotic communities that once covered Wisconsin.

We Can Help You Start Your Own Project!

Visit the Arboretum to see its restored prairies, forests, and wetlands—the world's oldest, ongoing plant community restorations. Here you can see the dramatic results of the first restorations, including beautiful Greene Prairie, planted almost single-handedly by Henry Greene on a former corn field, and Curtis Prairie, begun in 1934 by the Civilian Conservation Corps under the direction of Ted Sperry. This is where University of Wisconsin ecologist John Curtis documented the importance of natural processes, such as fire, to the health of a prairie restoration.

- Take classes in seed collection, wildflower identification, plant propagation, site analysis and management
- Come on free weekend tours
- Participate in volunteer training and restoration projects
- Enroll children in summer programs
- Grounds are open year-round from 7 am to 10 pm daily

Special Programs for Educators

- Tours for teachers and students
- Inservices for school faculties
- Restoration workshops for educators
- Consultation, visits and restoration advise from our staff

This brochure has been funded in part by a grant from the Center for Biology Education. Earthkeeping programs have been funded by generous grants from the Friends of the Arboretum, Center for Biology Education, and Wisconsin Environmental Education Board. Earthkeeping is a program idea developed jointly by the Arboretum and the Society for Ecological Restoration.

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Designed by Jane Tenenbaum

Woody Plant Collection Enhancement...*improves and highlights the display of Wisconsin's largest and finest collection of woody trees and shrubs, located in Longenecker Garden.*

Includes development of garden pathways, informational displays, improved seating, and the creation of lovely low limestone walls--in the spirit of those designed for the Arboretum entrance in the 1930s--to enhance the garden entrance.

Native Wisconsin Garden--Plant Collection and Endowment Fund...*to enable visitors to better appreciate and understand Wisconsin's rich natural heritage by introducing them to more than 500 trees, shrubs and herbaceous plants.*

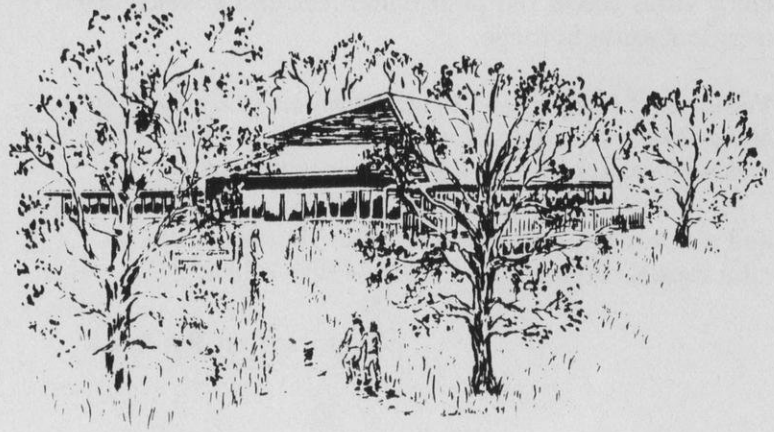
Includes labelled garden displays of prairie, woodland and wetland plants, pedestrian pathways, and informational displays.

Outdoor Educational Stations and Trail Improvements...*to better meet the needs of large groups and individual visitors to the Arboretum's collections.*

Includes informational displays, several seating areas for class groups adjacent to prairies and woodlands, a beautiful seating area overlooking Wingra Big Spring, and several new trails.

South Arboretum Visitor Reception Area...*to provide improved access to some of the Arboretum's finest plant collections, including jewel-like Greene Prairie and extensive oak savannas situated on rolling hillsides.*

Includes relocation and expansion of parking facilities with informational displays, trail improvements, oak forest and oak savanna restorations.



UNIVERSITY OF WISCONSIN-MADISON

ARBORETUM

MISSION AND GOALS

Mission

Within the context of the mission of the University of Wisconsin-Madison, the Arboretum is dedicated to fostering knowledge, appreciation and understanding of land as a community to which we belong.

Goals

Fully develop the Restoration Ecology Research Program, to provide national and international leadership in this evolving discipline.

Provide education programs for all ages that develop a positive, beneficial relationship between humans and the land.

Maintain for University teaching and research and public use and enjoyment a collection of native Wisconsin biotic communities, and diverse taxonomic plant collections.

Implement the 1994 Master Plan, designed to position the Arboretum to achieve its goals in the years ahead and better serve its growing audience.

MASTER PLAN

Entrance Oak Savanna...*an entrance experience that expresses the essence of Wisconsin's natural heritage, with stately oaks underplanted with a low-growing carpet of grasses and flowering plants.*

Includes plantings of trees, shrubs, and ground layer plants, new pedestrian pathways, and informational displays to greet and orient visitors. In the Arboretum tradition, plantings will be developed as part of an education program that involves people from the community in the restoration of our region's biodiversity.

Prairie Drive...*enhancement of the entrance drive along beautiful and historic Curtis Prairie, world's oldest restored prairie.*

Includes improved pedestrian pathways and new informational displays.

Visitor Center Oak Savanna...*creation of a dramatic setting for the expanded McKay Visitor Center. When visitors arrive at the heart of the Arboretum, they are surrounded by distinctive bur oaks, through which glimpses are caught of the magnificent tall grasses of Curtis Prairie.*

Includes an extensive oak savanna restoration planting, improved drive, parking and pedestrian pathways, low limestone walls, informational displays, and a council ring overlooking the prairie--an appropriate place for groups to gather before they begin their exploration of the Arboretum, as well as a place that beckons individuals to enjoy vistas across the prairie and reflect on Wisconsin's unique natural heritage.

Visitor and Education Center Expansion...*expansion of the McKay Visitor Center to meet the growing needs of the Arboretum's nationally-recognized education and research programs.*

Includes a 250-seat auditorium, offices, laboratories, and a new reception and orientation center, with educational displays and materials for visitors.

Continues on Reverse...

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NEWS

UNIVERSITY OF WISCONSIN–MADISON

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FOR IMMEDIATE RELEASE 9/19/94

CONTACT: Gregory D. Armstrong, (608) 262-2748

ARBORETUM TO MARK 60TH ANNIVERSARY

MADISON — The UW-Madison Arboretum will mark 60 years of restoring Wisconsin landscapes and the assembling of an extensive collection of trees and shrubs with an open house and celebration on Sunday, Sept. 25, at the McKay Center, 1207 Seminole Highway.

The Arboretum's birthday party will begin at 1 p.m. with a talk by Arboretum Director Gregory D. Armstrong, who will unveil a new master plan for the collection of restored landscapes that make up the Arboretum. At 2:30 p.m. Nina Leopold Bradley will comment on her father's experiences at the beginnings of the UW Arboretum 60 years ago. Bradley's talk will be followed by comments by W. Charles Read, acting dean of the UW-Madison Graduate School.

Throughout the afternoon there will be tours of the Arboretum as well as displays highlighting aspects of the Arboretum and its missions of teaching, research and outreach.

The events are free and open to the public.

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— Terry Devitt, (608) 262-8282

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NEWS

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MASTER PLAN CHARTS IMPROVEMENTS FOR UW ARBORETUM

MADISON — During the past 60 years, the University of Wisconsin-Madison Arboretum has been painstakingly developed into what is perhaps the world's finest collection of restored native landscapes.

That tradition will continue and be strengthened with the implementation of a new master plan to be unveiled publicly on Sunday (Sept. 25) during the Arboretum's 60th anniversary celebration at the McKay Center.

The plan, according to Arboretum Director Gregory D. Armstrong, will serve as a blueprint, guiding development of the Arboretum and its numerous collections of restored plant communities for the foreseeable future.

"The initial development of the Arboretum was really the world's first organized effort at ecological restoration," Armstrong said. "In essence, we're living out Aldo Leopold's land ethic. The purpose of the plan is to provide a framework for development that will keep us on that path."

The plan, which has been under development for more than a year, is intended to guide land use, traffic flow and landscape form while, at the same time, maintaining the integrity of the different biological communities that make up the Arboretum.

-more-

Highlights of the plan include:

• Expansion of the McKay Visitor Center to include a 250-seat auditorium, offices, laboratories and a new reception and orientation center.

• The development of an oak savanna, once southern Wisconsin's dominant landscape, at the Arboretum's Olbrich entrance on Seminole Highway. The development the savanna at the Arboretum's main entrance, Armstrong said, would be more emblematic of the Arboretum's restoration ecology emphasis than the traditional landscaping that now frames the entrance.

• Prairie Drive, the road that fronts the historic Curtis Prairie, would be improved to include pedestrian pathways and new informational displays. Curtis Prairie, the world's oldest restored prairie, would also be expanded.

• The development of an extensive oak savanna to serve as a setting for the expanded McKay Center. Incorporated into this native landscape would be improved drive, parking and pedestrian pathways; informational displays; and a council ring overlooking the prairie.

• The improvement of Longenecker Garden, Wisconsin's largest collection of woody trees and shrubs, to include garden pathways, displays and improved seating.

• The establishment of a native Wisconsin garden that would include labeled displays of prairie, woodland and wetland plants.

• Adding outdoor educational stations and trail improvements. Informational displays, seating areas adjacent to prairies and woodlands, and several new trails would be added to better meet the needs of groups and individual visitors to the Arboretum's collections.

• A south Arboretum visitor reception area would be developed to improve access

to some of the Arboretum's finest ecological restorations, including the internationally renowned Green Prairie and extensive oak savannas. Parking would be relocated and expanded. Trails would be improved, informational displays would be added and oak forest and oak savanna restorations would be undertaken.

"The plan represents our dreams and aspirations for the future," said Armstrong. "Over the past year we've taken a hard look at our facilities and our constituencies and we think we've come up with a plan that is going to help us meet our responsibilities to the university community and the community at large."

For anyone interested in learning more about the new master plan for the Arboretum, copies are available for review at the Arboretum's McKay Center, 1207 Seminole Highway.

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— Terry Devitt, (608) 262-8282

THE CAMPAIGN FOR WISCONSIN

PERTINENT FACTS

About the University of Wisconsin-Madison

and

PROFILES

of Academic and Program Units

ARBORETUM

Overall Strengths, Important Programs and Projects:

- Founded by naturalist Aldo Leopold in 1934.
- Internationally renowned for research and education in the field of ecological restoration; home of the Society for Ecological Restoration.
- Represents the world's largest and oldest collection of restored biological communities—1,280 acres on the shores of Lake Wingra, returned to their original state of prairie, forest and wetlands.
- Center for an innovative new program emphasizing basic and applied research in all aspects of ecological restoration, including instruction and training for future generations of restorationists.

New Directions, Future Turns:

- With the development of the ecological restoration research program, the Arboretum is undergoing transformation from a "place" into a "program" under the administrative auspices of the University's Graduate School.

Fund-Raising Priorities, Capital Campaign:

- The Aldo Leopold endowed chair in Restoration Ecology, to help attract a world-class scientific scholar who would focus research on ecological restoration and make expert use of the Arboretum's unique resources.
- Leopold Graduate Fellowships in Restoration Ecology to help support a research team and further enhance the capabilities of the world-class scholar.

- The total campaign goal for the Arboretum is **$2,000,000.**

Arboretum
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ARBORETUM NEWS & INFORMATION

This fact sheet is designed to clarify the actions of the Arboretum, and the motives behind them, in the sale of the Bishop Tract to the Livesey Co. of Madison.

The Arboretum's mission: The UW-Madison Arboretum, an outdoor research and teaching laboratory, is dedicated to promoting the restoration and stewardship of natural areas through scientific research, education, and public outreach. Since the 1930s the Arboretum has been recognized as a pioneer in the field of ecological restoration, and today holds what is believed to be the world's largest collection of restored ecological communities.

The land for sale: The 14-acre Bishop Tract abuts commercial development on the north and west, the Beltline Highway on the south, and the Chicago and North Western railroad tracks on the east. Only half of the eastern boundary is contiguous with the rest of the Arboretum.

Aerial photographs indicate that the parcel was farmed until the 1950s. When the land south of the Beltline was developed, storm-water systems were installed to accommodate the increased run-off. One of the storm sewers from this area ends at the south boundary of the tract, where the storm water exits from a large concrete culvert and flows north across the property. Years of run-off have resulted in a thick deposit of sediment and debris. The accumulated sediment, saturated during every storm, has developed some of the characteristics of a wetland soil, and weedy wetland species have colonized these deposits. These factors influenced the U.S. Army Corps of Engineers' and the Wisconsin Department of Natural Resources' recent decision to designate a part of this property as a wetland. Despite this finding, this parcel of land holds little value for the Arboretum's research and teaching mission.

The developer's role: Wetlands are protected by both state and federal laws. A developer wishing to build in an area officially designated as a wetland must get approval from both the state Department of Natural Resources and the U.S. Army Corps of Engineers. In some cases developers have obtained permission for a project that destroys or reduces the size of a wetland if, in turn, the company protects or creates another wetland of similar or greater size. Such "mitigation" agreements have resulted in the

protection of many existing natural wetlands. The practice of mitigation remains controversial, however, since some instances have resulted in establishment of mediocre new wetlands at the expense of high-quality original wetlands. Environmentalists have expressed concern that implying that any ecological community can be recreated may lead to failure to protect the few remaining natural communities.

The Arboretum's role: Why, then, is the Arboretum becoming involved in an agreement to build on a wetland? Arboretum Director Greg Armstrong gives four reasons:

1. The wetland to be filled in is of very poor quality and is nearly surrounded by highly developed land. The prospects for restoration are poor.

2. An area within the Arboretum holds excellent potential as a restoration site. Wingra Fen, a natural wetland described by John T. Curtis in the 1930s as the best in Dane County, has become heavily infested and overgrown with two species of non-native shrubs. Small areas that have been cleared by volunteers armed with loppers and hand saws have shown excellent response of the ground-layer species, including a rare small native ladyslipper orchid. This suggests that a massive clearing project within the fen might have good results.

3. Undertaking the Wingra Fen restoration under the supervision of the Arboretum would enable the work to become a model of responsible mitigation. The Arboretum could then establish guidelines for other such projects, including follow-up, documentation, and evaluation.

4. With the sale of the Bishop Tract, the Arboretum will reach its goal of funding a Leopold professor of restoration ecology with supporting fellowships for graduate students. This will launch a major initiative in restoration research that will benefit restorationists and earth dwellers everywhere.

Arboretum

☐ THE ARBORETUM'S CURTIS PRAIRIE

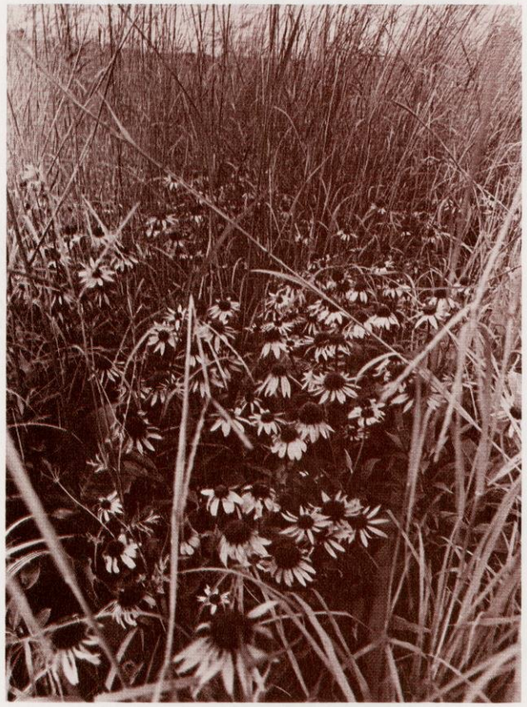
A traveler could crisscross Wisconsin for weeks and never see even a tattered remnant of the physical environment that used to cover two million acres of the state. But in the middle of Madison lie sixty-four acres of that very rare, little-known, and underappreciated ecosystem: tallgrass prairie.

This part of the UW–Madison Arboretum is the world's oldest restored prairie. Degraded pasture in 1935, it was replanted in the late thirties by Civilian Conservation Corps crews and UW–Madison ecologists, who periodically burned the plot to stimulate growth. Today the prairie features two hundred species of native plants, including puccoon, rattlesnake master, blazing star, prairie dock, and, most noticeably, big bluestem.

At Curtis Prairie, you can wander through the high grasses on a trail, which is accessible from the main road just east of Seminole Highway and north of the West Beltline thoroughfare. Besides a panoply of plants, you may see birds like goldfinches, meadowlarks, and indigo buntings.

For a wide-angle view, look at the area from the Arboretum's visitor center. Watch this sea of grass nodding and swaying in the breeze, and you'll know why the covered wagons that traversed this ecosystem were likened to schooners.

Burning Curtis Prairie

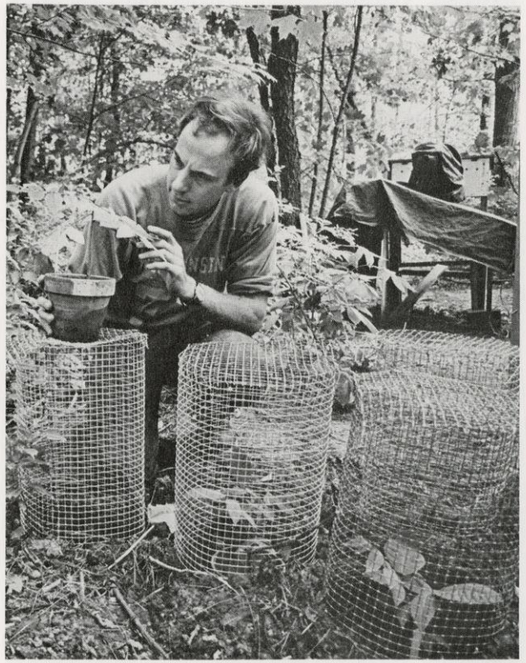


Greene Prairie

Uses of the Arboretum

Creation of its collection of ecological communities has placed the Arboretum decades ahead of other institutions in an area now recognized as vitally important, not only in ecology, but in practical areas as diverse as land reclamation, park and right-of-way maintenance, landscaping, and preservation of habitat for rare and endangered species. Research in this area continues here today and remains the Arboretum's most distinctive activity. Studies of the Arboretum's ecological communities and the plants and animals in them are also under way constantly, and the area has proved invaluable for a wide variety of studies by plant pathologists, limnologists, wildlife ecologists, soil scientists, horticulturists, landscape architects, and other natural scientists.

The Arboretum is also an outdoor classroom, not only for the University, but for students of all ages from all over the state, and for the general public as well. Recent surveys indicate at least a quarter of a million visits to the Arboretum by the public annually, and the number is growing.



Research—Noe Woods

Visitor Services

All Arboretum trails and landscaped areas are open to the public without charge every day from 7:00 AM until 10:00 PM.

The solar-heated McKay Center adjacent to the parking lot at the end of Longenecker Drive is open to the public daily, including weekends, and offers rest rooms, exhibits, slide programs, a nature reference library, guide booklets – including a color-illustrated introduction to the Arboretum – and other information. Hours are 9:00 AM until 4:00 PM weekdays and 12:30 until 4:00 PM weekends. Closed holidays.

Free public tours are offered weekends, weather permitting, and guided tours for groups are available for a small fee. For details or further information call the McKay Center, (608) 263-7888.

Regulations

You are welcome to hike our trails and enjoy the natural setting. Please help protect the Arboretum by:

Staying on trails.
Leaving pets at home.
Not removing natural materials.

To help preserve an undisturbed atmosphere and to protect experiments in progress, wheeled vehicles (except wheelchairs) are not permitted on trails. Picnicking, swimming, hunting and fishing, fires, sports, and radios are prohibited.

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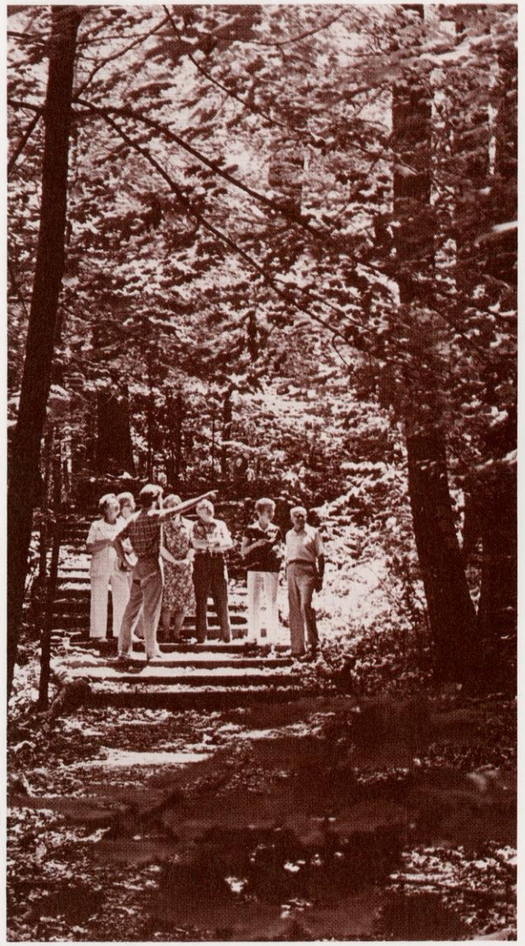
Welcome to
The University of Wisconsin–Madison

Arboretum

A microcosm of presettlement Wisconsin and site of pioneering research on the restoration and management of plant and animal communities.



A Different Kind of Place

Visitors to the University of Wisconsin–Madison Arboretum are often surprised by what they find here.

Traditionally, arboreta have been collections of plants, especially trees, and often including exotic and ecologically unrelated species growing in a more or less formal, garden-like setting.

The UW-Madison Arboretum is different.

Apart from its large collection of ornamental trees and shrubs, this Arboretum is not a collection of plants but a collection of plant and animal *communities* representing all the major communities native to Wisconsin and the upper midwest.

The creation and development of these communities have made the Arboretum a pioneer in research on the restoration and management of ecological communities and represent a unique contribution to the conservation movement that grew out of the economic and environmental disasters of the 1930s.

And the communities themselves make the Arboretum a kind of living museum – a unique ecological microcosm of presettlement Wisconsin.

History

The UW-Madison Arboretum is the result of the coming together of a remarkable variety of ideas and interests.

Acquisition of the land was largely the result of an energetic campaign begun during the 1920s and led by Madison citizens interested in preserving open space for the rapidly growing city. The first land, a run-down 245-acre farm including what is now the Longenecker Gardens and parts of Curtis Prairie, was acquired in 1932. The Arboretum grew rapidly during the subsequent decade, partly because of the low land prices of the depression era. By 1942 it included 1,100 acres; today it includes 1,280.

Responsibility for development of this property was assigned to an interdisciplinary university committee, and the members of this committee during the Arboretum's formative years were the ones who developed the novel plan for its development. Among them were researchers and environmental leaders such as botanists Norman Fassett and John Curtis, landscape designer G. William Longenecker, and wildlife ecologist Aldo Leopold.

Labor for the early stages of development was provided by Civilian Conservation Corps crews stationed in the Arboretum from 1935 to 1941.

The Collections

More than twenty miles of trails and firelanes provide access on foot to all but the wetland communities. Visitors may walk on lawns in landscaped areas.

ECOLOGICAL COMMUNITIES

Prairies. More than 300 species of native plants flower here in unbroken succession from April through October.

Curtis Prairie – Sixty acres of restored prairie just south of the McKay Center. This is the world's oldest restored tallgrass prairie and site of classic experiments on the use of fire in prairie management during the 1940s.

Greene Prairie – Forty-five acres in the southern part of the Grady Tract south of the Beltline Highway. The single-handed creation of botanist Henry Greene, and the Arboretum's most faithful replica of native prairie.

Deciduous Forests. Highlights are woodland flowers in spring and brilliant color in fall.

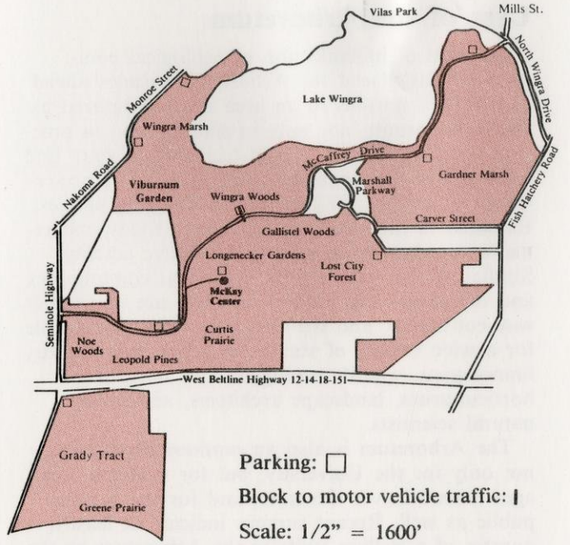
Noe Woods – An excellent example of oak forest, including a virgin stand dating back to the time of settlement. 43 acres.

Wingra and Gallistel Woods – Oak forests on the hill south of Lake Wingra. These woods are gradually being converted to examples of the forest of sugar maple, yellow birch, and hemlock native to northern Wisconsin (in Wingra Woods, 47 acres); and the southern forest of sugar maple and basswood (in Gallistel Woods, 30 acres). Burial mounds in these woods are relics of an Indian culture that flourished here sometime between 600 B.C. and 1000 A.D.

Conifer Forests. A hint of the northwoods, including both pine and boreal forests.

The Aldo Leopold Pines – where intensive thinning and underplanting began in 1977. 59 acres.

Boreal Forest Plantings – of spruce and fir, east of Curtis Prairie and in the Grady Tract adjacent to the Beltline Highway. Altogether about 14 acres.



Wetlands. Valuable wildlife habitat and ideal areas for research on the rehabilitation and management of wetlands disturbed by human activities. Altogether about 250 acres.

Gardner Marsh – east of Lake Wingra, was disturbed by an unsuccessful development project early in this century and is a prime candidate for management studies.

Wingra Marsh – west of the lake, includes some of the Arboretum's least disturbed wetland.

HORTICULTURAL COLLECTIONS

Longenecker Gardens. Fifty acres of ornamental trees and shrubs north of the McKay Center. A highlight is the blooming, usually in May, of outstanding collections of lilacs and flowering crabapples. These gardens also include a small formal shrub garden and an extensive collection of trees grouped by genus. All specimens in the gardens are labeled, usually with a tag attached to a south-facing branch.

Viburnum Garden. More than eighty species and varieties of viburnums, with some conifers, on Manitou Way, just south of its intersection with Nakoma Road.

Friends of the Arboretum

You are invited to be a part of the Arboretum and to keep in touch with its activities by joining the Friends.

This organization was formed in 1962 to bring the Arboretum's many friends together, to provide financial support for the Arboretum, and to enhance its relationship with the community of which it is a part. Today the Friends provide valuable support for a wide variety of Arboretum projects, including property acquisition, guided tours and public programs, printing of Arboretum publications, and research.

Members receive the monthly *NewsLeaf* and are invited to attend special events and programs. In addition, they receive a 15 percent discount on purchases at the McKay Center.

All contributions and membership fees for the Friends are tax deductible as allowed by law. Make checks payable to: University of Wisconsin Foundation–Arboretum.

To join the Friends, please fill out and return with your contribution.

Name _____

Address _____

City _____

State _____ Zip _____

Please write name exactly as you wish it to appear on our mailing list.

Comments _____

_____

☐ Student	$ 10
☐ Senior Citizen	$ 15
☐ Individual	$ 20
☐ Family	$ 30
☐ Organization	$ 30
☐ Business	$ 50
☐ Supporting	$ 50
☐ Patron	$100 and above

Additional contribution $ _____

Mail to: Friends of the Arboretum
University of Wisconsin Arboretum
1207 Seminole Highway
Madison, WI 53711

UW-Madison Arboretum
Volunteer Position
for
Volunteer Steward

The objective of this new volunteer steward program is to involve citizens in the protection of the UW-Madison Arboretum through increased presence and training in teaching visitors the appropriate ways to use the Arboretum.

Volunteer stewards will act as liaison between staff and general public, providing information and educating visitors about the Arboretum. They are responsible for informing visitors about use and condition of trails and facilities as well as observing changing conditions at the Arboretum and communicating this information to staff.

If you would like to learn about the Arboretum while teaching others about appropriate ways to use the Arboretum, we invite you to join the volunteer steward group. Training and all necessary equipment will be provided. After the initial training, shifts are available on a flexible basis from 6 a.m. to 10 p.m., all week.

Please call the Volunteer Program office, 263-7760 for more information.

The University of Wisconsin-Madison Arboretum

Birthplace of an Idea

Unlike other arboreta, the University of Wisconsin-Madison Arboretum extends beyond the traditional collection of labelled trees and plants. When Aldo Leopold and his colleagues first began planning the Arboretum in the early 1930s, they decided to include examples of prairie, forest and wetland communities native to the upper Midwest.

Since many of these no longer existed on the property, they decided to try to recreate or restore them. As a result the Arboretum became the site of a series of historic attempts at environmental restoration.

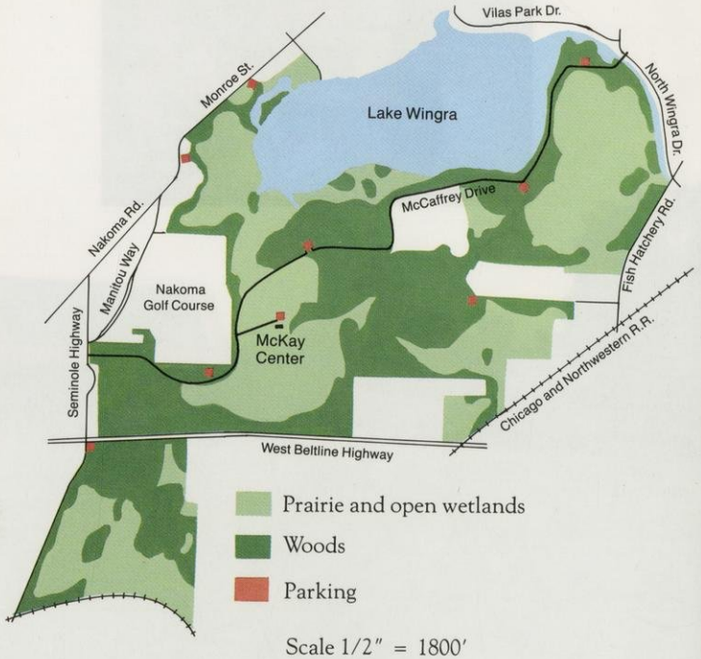
Since then it has become clear that restoration has far reaching implications for the environment and for our relationship with it, and today the Arboretum is recognized nationally and internationally for its pioneering work in this rapidly expanding field.

A Unique Arboretum

A highlight of the Arboretum is its collection of restored ecological communities, thought to be the oldest and most extensive in the world. These offer a unique opportunity to explore the Wisconsin of presettlement times.

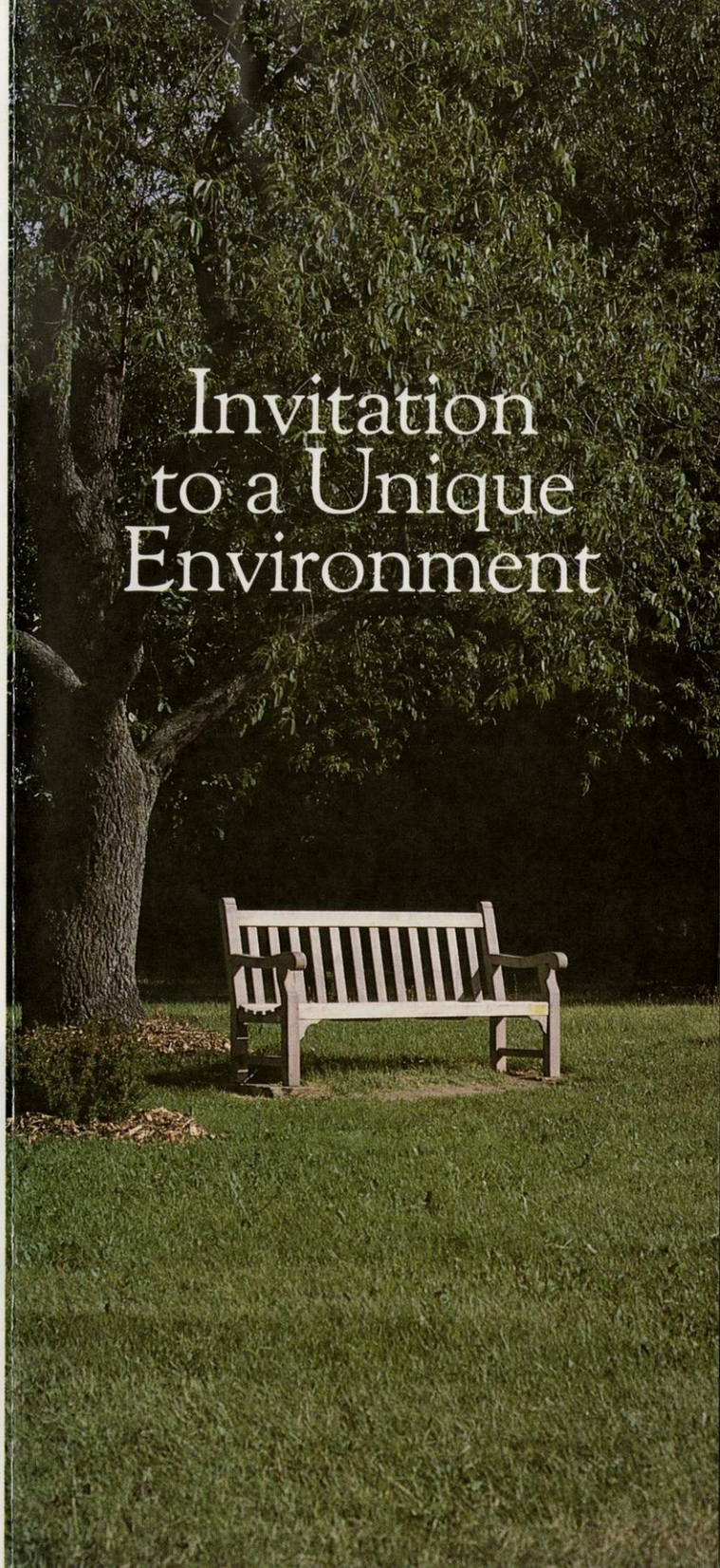
A few facts about the Arboretum:

- Dedicated in 1934
- Area 1,280 acres, or two square miles
- 25 miles of woodland and prairie hiking trails, some open for running and cross-country skiing
- Extensive collection of trees and shrubs
- Ecological collections include more than 30 communities native to Wisconsin, including Curtis Prairie, the world's oldest restored tallgrass prairie
- These communities provide habitat for what is believed to be the richest variety of plants anywhere in the state. Some 400 species of plants bloom on the prairies alone; 248 species of birds have been recorded here, and resident mammals include fox, weasel, mink, deer — and skunk!



Brochure design by Charles R. Broehl

Invitation to a Unique Environment



The Friends Support the Arboretum

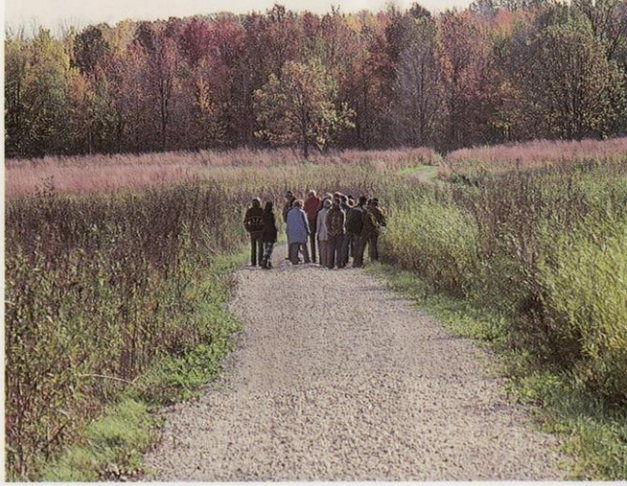
Each year the Arboretum attracts thousands of visitors who enjoy its quiet woodland trails and prairie paths. Many of these have discovered that becoming a Friend of the Arboretum is the most rewarding way to benefit from this unique community resource.

Founded in 1962, the Friends of the Arboretum organization provides the Arboretum with financial assistance and a variety of services. Membership contributions are used to support guided tours, public programs, research grants, lecture series and the production of trail maps and booklets.

Friends serving as volunteers contribute thousands of hours to the Arboretum each year. Indoors at the McKay Center volunteers are receptionists, serve on committees, and take on special jobs such as working with our newsletter or sharing artistic talent. Outdoors, volunteers assist with the restoration and management of ecological and horticultural plant collections, or serve on the Arboretum's ski patrol.

Benefits of being a Friend

- Receive *"NewsLeaf,"* the Friends of the Arboretum newsletter
- Participate in lecture-luncheons, field trips and occasional excursions to distant locations
- Receive a 15% discount on McKay Center purchases
- Receive reduced fees for Arboretum-sponsored classes
- Attend receptions and other invitational events, including the annual meeting and picnic breakfast



The Friends need you

The Arboretum needs both your help and your financial support. As a Friend, you will be joining others who treasure this remarkable resource and who wish to take part in sustaining it.

We hope you will become a member by mailing the enclosed application to: Friends of the Arboretum, 1207 Seminole Hwy, Madison, WI 53711.

Friends of the Arboretum Membership Contribution

(Please check appropriate box)

☐ Individual.....$20	☐ Business.....$50	☐ Senior.....$15
☐ Family.....$30	☐ Supporting.....$50	☐ Student.....$10
☐ Organization.....$30	☐ Patron.....$100 or more	

Name _____

Address _____

City _____ State _____ Zip _____

Please make checks payable to the Friends of the Arboretum, Inc., 1207 Seminole Highway, Madison, Wisconsin 53711. Your contribution is tax deductible to the extent allowed by law.

Volunteers are needed for:

- ☐ Receptionist duties at the McKay Center
- ☐ Assistance with mailings and clerical work
- ☐ Volunteer stewards
- ☐ Restoration activities
- ☐ Gardening in woody plant collection
- ☐ Newsletter: reporting, writing, artwork

If you would like further information about these and other volunteer opportunities, please call the Friends office, 263-7760, or give us your telephone number.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 9/11/91

ARBORETUM PLANS PRAIRIE CELEBRATION SEPT. 12-15

MADISON--An art exhibition, special programs and prairie tours will be featured during a Sept. 12-15 prairie celebration at the University of Wisconsin-Madison Arboretum. The event is sponsored by Arboretum staff and Friends of the Arboretum.

A free public reception will open an invitational art exhibition at the Arboretum's McKay Center Thursday afternoon, Sept. 12. Refreshments will be served from 4 to 6 p.m. Twelve area artists have been asked to create works for the showing and art works will feature ecological restoration. Arboretum staff member Brock Woods has held seminars for artists during the summer to acquaint them with various techniques of prairie management. Two or three works will be displayed by each of the 12 artists and the art works will be on display through Oct. 17.

The prairie celebration will end with tours of the Arboretum prairie, schedules for 1 to 4 p.m. Sunday, Sept. 15. Starting at the McKay Center, the tours will be led by Arboretum naturalists and refreshments will be served during the afternoon.

Members of the Arboretum Friends group have been invited to a special fund raising program at the McKay Center Saturday evening, Sept. 14. All other activities are open to the public and free.

The arts exhibition was arranged by Helen Iltis and the overall prairie celebration is chaired by Marion Hill who can be reached at 222-6478.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 06/07/91

NEWS BRIEFS

ARBORETUM RECEIVES GRANT

The UW-Madison Arboretum has received a $67,984 grant from the Institute for Museum Services.

Gregory Armstrong, Arboretum director, said the money will go for of projects to improve the usefulness of this unique outdoor lab and classroom, and to make it more attractive to visitors; enhancing a computerized research and management system at the 1,200-acre facility, as well as helping pay for improvements to the Arboretum's journal, Restoration and Management Notes.

The Institute for Museum Services is a federal agency that provides support for the nation's museums.

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LIBRARIANS OF THE YEAR HONORED

Jean Thompson and Gene Dewey were recently honored as Librarians of the Year for 1991 at the annual high tea of the General Library System Librarians Assembly.

The Librarian of the Year Award goes to two people each year, one with less than 10 years of GLS service and one with 10 or more.

Jean Thompson came to UW-Madison in 1983 as head of the reference department and in 1986 became assistant director for reference and information services. She previously served as head of the social science department and associate professor in the university libraries at Virginia Tech. At the award ceremony Thompson was called "a paragon of integrity, straight talking and straight thinking."

Gene Dewey, a GLS librarian since 1969, coordinates acquisitions and administers a materials budget of nearly $5 million. He formerly directed the acquisitions department at SUNY-Buffalo. Colleagues said Dewey is "a tireless behind-the-scenes worker" who is "never too busy to answer questions."

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uw cutlines

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 6/21/90

[PIX #9006-281-23]

BIKES BARRED FROM LAKESHORE PATHS

Crews from the UW-Madison Arboretum have begun erecting signs discouraging the use of mountain bikes on certain campus trails along the shore of Lake Mendota. According to Arboretum Director Gregory Armstrong, the rate of erosion on some trails has been greatly accelerated by mountain bikes.

-- University News Service photo by Cary Shlimovitz

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 6/21/90

CONTACT: Gregory D. Armstrong (608) 262-2748

CITING EROSION, UW BARS MOUNTAIN BIKES FROM SOME LAKESHORE PATHS

MADISON--Citing a dramatic increase in erosion and other damage, University of Wisconsin-Madison officials this week have begun to restrict access by mountain bikes to steep lakeshore trails and other sensitive areas.

In the last few years, the popularity of the fat-tired bikes has ballooned and increasing numbers of mountain bike enthusiasts have discovered the vast network of foot paths that snake through some 1,500 acres of wooded and natural areas on the UW-Madison campus, said Arboretum Director Gregory D. Armstrong.

"It's become a serious problem along the lakeshore, especially on steep slopes prone to erosion," Armstrong said.

"We've always had an erosion problem, but it's been greatly accelerated and aggravated by bicycles," he said. "Within the last couple of years mountain bikes have changed the situation dramatically."

Published reports indicate that mountain bikes, which, as their name implies, are designed for rugged terrain, now make up almost half of all bicycle sales in the United States.

Mountain bikes have a tendency to groove trails which accelerates erosion, according to Norman J. Pazderski, a Wisconsin Department of Natural Resources specialist.

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"All biking causes some erosion," Pazderski said. "The problem with mountain bikes is they can go just about anywhere. The tires are much knobbier and they chew up trails quicker."

He said state parks have yet to experience serious problems, but there are concerns about mountain bikes being taken off trails and into sensitive areas.

"County and city parks are likely to experience the problem first," Pazderski said.

This week, crews from the Arboretum, which has responsibility for upkeep and maintaining the natural integrity of certain campus natural areas, began posting signs to prevent bicycle access to trails prone to erosion.

Trails affected by the new restrictions include those in Muir Woods on Bascom Hill, Frautschi Point, Eagle Heights Woods and Wally Bauman Woods, the westernmost extent of the University's holdings along Lake Mendota.

Armstrong stressed that the university was not putting the whole system of trails off limits to bicyclists, just those with steep slopes or other sensitive features.

Recently, UW-Madison workers had to fence off an Indian mound near Eagle Heights that had been seriously damaged by mountain bikes, Armstrong said.

In another area, mountain bike enthusiasts had worn a groove through an erosion berm put up to prevent loose soil from washing into the lake, he said.

"The lakeshore is an extraordinary resource for the university and the community not only for aesthetic purposes, but also for academic reasons: research and teaching are carried out in many of those areas," he said.

"I understand people wanting to enjoy natural beauty, but we have a responsibility to preserve these areas which is equally as weighty as the right to use them."

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-- Terry Devitt (608) 262-8282

#3310I

—NEWS & NOTES—

■ **Arboretum acquires forest housing**—Commuting can be a drag, sometimes even an obstacle.

That's why UW-Madison Arboretum officials are excited about the newly acquired housing accommodations at Hanson Forest, located in Wisconsin's Ashland County. The forest is 290 miles from Madison.

"With the facility so far from Madison, it simply is impractical to carry out research from Madison if we don't have living facilities," said Gregory D. Armstrong, director of the UW-Madison Arboretum. "We will now have a place to house students and researchers who want to take advantage of this research area."

Three cabins, with single or double occupancy for up to 14 people, were the recent gift of Martin Hanson to the UW-Madison Arboretum. A separate dining hall with full kitchen amenities, is available for use by all lodgers.

The Hanson Forest property, located within the Lake Superior snowbelt, covers 900 acres and includes most of the shoreline of Beaverdam Lake.

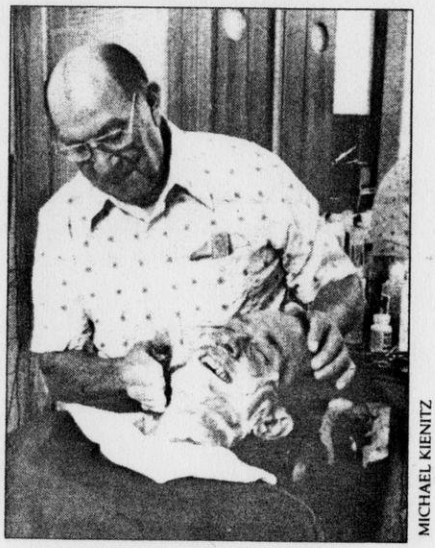
Orrin Rongstad, UW-Madison wildlife ecology professor, has taught classes in wildlife management technique at the forest and been involved in a number of research projects on the grounds. Since 1986, Rongstad has been trapping deer and outfitting them with radio transmitters. To date, about 100 deer with radio transmitters roam the forest.

Rongstad has also studied the ground yew, an uncommon plant species in Wisconsin, male ruffed grouse, and white tail deer fawns. He has found the cabins indispensable to his research work. "It is too hard to depend on tents. During the rainy season, it can be a mess."

Those wishing to make reservations for the cabins should apply to the Arboretum Office. Priority will be given to university faculty, students, staff and employees of other public agencies who are conducting research or educational programs directly related to Hanson Forest.

If space is available, the facilities may also be used by the same individuals for off-station research activities, and as a site for courses, conferences and meetings.

Cabin users must provide their own towels, linens and toiletries and are responsible for their own housekeeping. The rates for lodging are $6.50 per night or $125 per month.



MICHAEL KIENITZ

Bus Topp lathers a client.

■ **Bus Topp stops buzzing**—A sad announcement for those who care about good-natured talk and old-fashioned shaves: Bus Topp no longer buzzes tops in Memorial Union.

Topp, 85, opened the Wisconsin Union Barbershop in 1928 in a corner of the just-finished Memorial Union near the Rathskeller. A few weeks ago he closed up for good after 61 years as the Union barber.

(Two years ago, on his 60th anniversary, he was featured by Wisconsin Week and many other media and congratulated by Gov. Tommy Thompson.)

In his pre-Beatles heyday, Topp employed four barbers, a manicurist and a porter. In recent years he worked alone in a small room next to his original shop.

Topp was renowned for his barbershop banter and wide-ranging comments on university life. In turn, he genuinely liked his customers: "Coming here every day is like going to a show," he said.

In fact, Topp got such a kick out of cutting hair and shaving faces that he missed only six weeks of work after suffering a stroke in 1988. But last fall he suffered another stroke, prompting his decision to hang up his clippers and straight razors.

He was hospitalized again this month but should return home this week. For those who might want to thank Bus Topp for 61 years of convivial barbering, his address is 531 Windsor St., Sun Prairie, WI 53590.

■ **Nobel laureate's book reprinted**—The University of Wisconsin Press will issue a hardcover reprint this month of a book by Camilo Jose Cela, winner of the 1989 Nobel Prize in literature.

The UW Press will print 2,000 copies of "Journey to the Alcarria," a 1964 travel book by Cela based on a trip through his native Spain. It took 25 years for the press to sell the book's original 2,000-copy run.

The UW Press has sold paperback rights for the Cela work to the Atlantic Monthly Press in New York City. The Atlantic edition is due out in February.

"Cela is the first Nobel Prize winner our press has ever published," says press director Allen Fitchen. "and we trust he won't be our last. In the meantime, we're gratified by the distinction that Cela's honor brings to the press and the university."

Hardback copies of "Journey to the Alcarria" can be ordered at $17.50 apiece through book stores or University of Wisconsin Press, Orders Department, 114 N. Murray St., Madison, WI 53715.

■ **Sports Day celebrated**—UW-Madison's McClain Indoor Practice Facility will be the site of the statewide kickoff for National Girls and Women in Sport Day Thursday.

The national theme for the 1990 event is "The Winning Combination: Females and Sports." The day will be celebrated nationally on Feb. 8. The Wisconsin celebration is a week earlier so that the festivities can be held in conjunction with the UW System Board of Regents meeting on Feb. 1.

The luncheon and program will bring together nearly 200 high school and UW System athletic administrators. In addition to members of the regents, chancellors of the UW System schools and their faculty athletic representatives will be in attendance.

The women administrators from each campus and several coaches and athletes of nationally prominent athletic programs also will be present.

The program will include introductions of the athletes and coaches, and the presentation to UW System President Kenneth Shaw of a State Proclamation signed by Gov. Thompson proclaiming Feb. 8 as "Girls and Women in Sports Day" in the State of Wisconsin.

For more information, contact Judy Kruckman at 262-4407, or Kit Nordeen at 263-5580.

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 10/20/89

CONTACT: Gregory Armstrong (608) 262-2748

ARBORETUM GETS MUSEUM GRANT FOR CONSERVATION PROJECT

MADISON--The University of Wisconsin-Madison Arboretum has received a grant to help it accurately map and create a long-range plan for its collection of "biological communities" -- the restored wetlands, forests and prairies that cover about 1,000 of its 1,280 acres.

The $25,000 grant from the Institute of Museum Services will allow the Arboretum to develop a base map of its collection, a computerized database of information about the collection and a long-range conservation plan, according to Arboretum Director Gregory Armstrong.

"Using this grant, we'll be able to put a systematic approach in place, for the first time, to accurately and consistently locate our plant collections," Armstrong said. "We'll also be able to locate areas where we have unwanted invasions of plants, where we have observed certain plant and animal populations, and where there have been natural occurrences such as windfall and disease outbreaks."

The database planned in conjunction with the mapping will make valuable and extensive information on the plant collections readily available to Arboretum staff and other researchers and educators, Armstrong added.

Another important aspect of the project is development of a long-range conservation plan, Armstrong said.

-more-

Add 1--Arb grant

"The time required to develop a biological community like the Arboretum far exceeds the time that any staff member is here," Armstrong said. "A long-range plan can ensure the Arboretum's survival and usefulness."

Armstrong; botanist Virginia Kline, the Arboretum's ecologist; and civil and environmental engineering Professor James Clapp will take the lead roles in the project.

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#1907I

Arboretum

UW Arboretum Director Gregory Armstrong looks over part of the 15-acre parcel of land proposed for sale.

Arboretum land sale would finance research

WI.Week 10/4/89

(EDITOR'S NOTE: At the July University of Wisconsin system Board of Regents meeting, a proposal to sell about 15 acres of land at the UW-Madison Arboretum was tabled for further discussion at a later date. The regents are scheduled to consider the proposal at their meeting this week.)

By Chuck Nowlen

The proposed sale of what UW Arboretum Director Gregory Armstrong calls an unneeded parcel of land on the fringe of the Arboretum would provide crucial seed money for new research and teaching on ecological restoration.

Armstrong described the 15-acre parcel, almost totally surrounded by the South Beltline Highway and commercial development on Madison's far south side, as offering little present or future value to the Arboretum.

Currently, the site is marked only by a prominent storm drainage channel, reed canary grass, a few box elder and honeysuckle trees and other foliage typical of "ecologically disturbed" property, he said.

"We don't want to be selling off parts of the Arboretum willy-nilly, and you can be sure we have thought about this long and hard," Armstrong said. "But we can't foresee any particular value in hanging on to it, and it may be valuable to developers. We see a tremendous opportunity here to boost our ecological restoration research and teaching program."

About $1 million to $2 million is needed to start the new program, which will involve an endowment for an Aldo Leopold Professorship, graduate student fellowships and research supplies.

The Aldo Leopold Professor, who also would coordinate related research by other UW-Madison faculty, would be "a crucial element in the Arboretum's plan to maintain its leadership role in the field of ecological restoration," Armstrong said.

However, the land might be attractive to commercial developers, and sale proceeds would help finance UW-Madison teaching and research in an area where the university is among the nation's leaders, Armstrong said. Such projects would "make a significant contribution to our society and our biological home," he said.

The UW System Board of Regents will be asked to authorize a land use planning effort on the marginal parcel.

The proposal has already received considerable scrutiny from the UW-Madison Arboretum Committee, UW-Madison's Department of Planning and Construction and UW System Administration, Armstrong said.

"We want to emphasize that this is not a formal request to sell at this time, but a request to do a land use plan and then return to the regents with the results," he said. "We want to leave the Board of Regents in the driver's seat. They can accept or reject the recommendations of the planner."

Armstrong said he could not estimate the commercial value of the parcel until an appraisal and advertising process has been completed. If the entire process goes smoothly, purchase offers could be brought to the Board of Regents by spring, 1990, he said.

Add 1--Newsbriefs

11/25/87 Arboretum

BRETHERTON TALK TO FOCUS ON EARTH SCIENCE

Francis P. Bretherton, former head of the National Center for Atmospheric Research and a visiting Brittingham professor in UW-Madison's Space Science and Engineering Center, will give a talk entitled "Future Challenges in Earth System Science" on Tuesday, Dec. 1.

The 3:30 p.m. talk, to be held in Room AB20 of Weeks Hall, is free and open to the public.

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ARBORETUM'S KLINE GETS NATURE CONSERVANCY HONOR

Virginia M. Kline, research program manager for the UW Arboretum, is one of 13 recipients of the Nature Conservancy's Oak Leaf Award.

The award is the Conservancy's highest honor, given in recognition of exceptional contributions and long-time volunteer service.

The Nature Conservancy is an international organization committed to the preservation of natural diversity. Its mission is to find, protect and maintain the best examples of communities, ecosystems and endangered species in the natural world.

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COOPER CITED BY AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

Stuart L. Cooper, chairman of the UW-Madison department of chemical engineering, was named the 1987 recipient of the American Institute of Chemical Engineers' Materials Engineering and Sciences Division Award.

Cooper, a biomaterials expert, was cited for "outstanding and very broad contributions to the field of materials engineering and science," and specifically for work on improving production methods for new polyurethanes and his studies of the interaction between synthetic materials and blood.

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Arboretum

Steve
Susan
Karen
Terry
Opp. Return to mary L. for files.

FOR IMMEDIATE RELEASE

April 10, 1987

UW-Madison Arboretum
1207 Seminole Highway
Madison, WI 53711
(608)263-7889

For further information contact: Gregory Armstrong, 262-2748; Virginia Kline, 263-7344; Becky Brown, 263-2158; Ed Hasselkus, 262-1450; Bill Jordan, 263-7889.

ARBORETUM ANNOUNCES DAYTIME SHOOTING TO CONTROL DEER

A program of daytime shooting will begin Monday in an attempt to control a rapidly growing population of deer in the University of Wisconsin-Madison Arboretum.

The decision was made in response to unusually severe damage to research projects and experimental and demonstration plantings reported by UW researchers carrying out projects at the 1280 acre research and teaching facility, according to Arboretum Director Gregory Armstrong.

Shooting will begin as soon as possible and will continue as long as the deer come to bait stations established at several locations in the Arboretum, Armstrong said.

It will be carried out by specially permitted marksmen shooting from elevated stations to minimize hazards. Areas where shooting is being carried out will be clearly marked.

more

Meat and skins from animals taken from the Arboretum are the property of the DNR and will be used at state institutions.

The objective will be to reduce the Arboretum's deer population to two to four animals--the number that might have been expected to occupy an area the size of the Arboretum at the time of European settlement in the early 19th century.

This is in keeping with the Arboretum's purpose of maintaining a collection of ecological communities resembling those that occurred in Wisconsin prior to settlement, Armstrong pointed out. "That's one of our main jobs. To do it we control populations all the time. If we have too little of something, we bring it in and try to encourage it. If we have too much we look for ways of controlling it. And that is the situation with the deer."

Armstrong noted that deer have become a problem in many areas where removal of predators such as wolves has allowed populations to grow unchecked. "I guess the point is that if we get rid of the wolves we wind up taking over the wolves' job of controlling the deer population," he said.

The deer, a perennial problem at the Arboretum, were under control several years ago, when the population was reduced to several animals by a highly effective program of nightime shooting at lighted bait stations, Armstrong said. That method had to be abandoned, however, when the Arboretum was unable to obtain a permit for nighttime shooting from the Department of Natural Resources.

more

Efforts since then to capture deer at night have been unsuccessful, and during the past two years the Arboretum's deer population has risen to an estimated 30-40 animals, roughly ten times the number that would probably have occupied the area in historic times, Armstrong said.

The result is increasingly severe damage to ecological communities and horticultural plantings, reducing the value of the Arboretum both as a research area and as a collection of restored ecological communities, Armstrong said.

He pointed to extensive damage to trial plantings in the Arboretum's Longenecker Gardens and to damage to ecological experiments in Lost City Forest in the eastern part of the Arboretum.

Damage in the Longenecker Gardens has included extensive browsing and antler damage to magnolias, and browsing of conifer plantings and of trees in the crabapple collection, thought to be one of the most extensive in the United States.

In Lost City, deer have damaged naturally occurring plants from which Botany and Institute for Environmental Studies Prof. Becky Brown had been collecting data for the past three years in a study of factors influencing the performance of various native and exotic species in ecological communities.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 3/13/87

CONTACT: Greg Armstrong (608) 262-2748, Edward Hasselkus (608) 262-1450

DEER PUT ARBORETUM ON THE HORNS OF A DILEMMA

By KAREN WALSH
University News Service

MADISON--The deer population in the University of Wisconsin-Madison Arboretum has soared in the last two years, and so has damage to the area's plant life, according to Arboretum officials.

An estimated 30 to 40 deer now live in the 1,200-acre preserve, and they are eating the Arboretum's very reason for existing -- its collections of restored biological communities and woody plants.

"The deer damage is very severe," said UW-Madison horticulture Professor Edward Hasselkus, a researcher who works extensively in the Arboretum. "At the rate we're going, we won't be able to do any research at all before long. Except, of course, on deer."

The population began rising two years ago when the Arboretum had to stop its program of shooting deer at night. At that time, the State Department of Natural Resources passed an administrative rule forbidding the shooting of deer at night using lights, a practice also known as "shining." (Uniformed law officers are an exception.)

Arboretum Director Greg Armstrong said he was told by DNR officials that they could not make an exception for the Arboretum.

"Right now, the population of deer is extraordinarily high," said

-more-

Armstrong. According to UW-Madison wildlife ecologists, a similar natural area could tolerate only about eight to 10 deer without severe damage to its vegetation.

Deer damage the Arboretum plant life in two ways. First, they eat many of the plantings in research and restoration plots. One example is the wildflower trillium, which Arboretum staff have been trying to restore to wooded areas. Deer have eaten significant numbers of trillium, and Arboretum ecologist Virginia Kline said no more plantings will be attempted until the deer are controlled.

The second problem is rubbing, which Hasselkus said is especially damaging to young woody plants.

"When the bucks rub their antlers on the young trees, they take with them both the bark and branches," he said. "If the tree survives the rub, it will grow abnormally -- crooked and with fewer branches. At that point, its research value is lost to us."

Hasselkus said his continuing evaluation of new ornamental crabapple trees is at a virtual standstill due to deer damage.

"The deer go after the fruits, breaking branches along the way," he said. "I can't get any young trees started, and the trees I have now look like lollipops."

Fencing has proven sporadically effective, according to Hasselkus and Kline. Individual screening has helped save some new seedlings, but Kline said as the tree grows up, its upper branches soon become vulnerable to deer browsing. Hasselkus said they have tried fencing entire research areas, but the labor time and cost involved is prohibitive.

Arboretum officials are searching for a method of deer removal that is affordable and effective. They could conceivably continue to shoot deer at night, because law officers are excepted from the DNR rule on night shooting.

Add 2--Arboretum deer

UW-Madison wildlife ecology Professor Orrin Rongstad said he approached UW Police and Security about shooting the deer, and "they agreed to do it as long as we trapped them together in a corral first. But we haven't been successful the last two years getting them to take the bait in the traps."

"The alternative to pre-trapping is to sit there all night, wait for the deer to appear, and then shoot them. That requires a lot of dedication and time. The UW Police don't want to do that, and I don't blame them."

Armstrong said he is reluctant to try closing the Arboretum for a daytime shoot. "The Arboretum isn't fenced in, and I just couldn't be 100 percent sure we could guarantee safety during the day," he said.

Alternatives to shooting the deer have been found to be both ineffective and expensive. A 1983 cost analysis study found that methods involving live removal were significantly more expensive than shooting. For example, trap removal costs $569 per animal, and drive netting costs $523 per animal. Shooting the deer costs about $74 per animal.

Shooting deer has been a touchy subject in the past, Armstrong acknowledged, but it is an unfortunate necessity.

"Like many people, I don't like the idea of shooting these beautiful animals. But the purpose of the Arboretum is to serve as a setting for research on and restoration of ecological communities.

"In order to make that happen, we must change what is abnormal. If our wooded areas don't have trillium, we must plant it. If they have weeds, we must remove them. If there is an overabundant native plant, we must remove it. The same is true of the deer."

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-- Karen Walsh (608) 262-0065

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 5/4/87

CONTACT: James H. Zimmerman (608) 263-7300,

Gregory D. Armstrong (608) 262-2748

UW-MADISON WETLANDS GET HELP FROM CONSERVATION CORPS

MADISON--Conservation Corps members from across the nation will take hammers and saws to the University of Wisconsin-Madison Arboretum and University Bay Marsh Wednesday (May 6) to help install boardwalks across wetlands.

Corps members and administrators will be in town May 5-7 for the annual conference of the National Association of Service and Conservation Corps hosted by the UW-Madison.

According to Wisconsin Conservation Corps crew leader Douglas D. Marth, the boardwalks will give corps members from as far away as New York and Texas a chance to work side by side with the Wisconsin corps.

"It will be a little tricky," said Marth. "The skill level of the groups is a big unknown so we can't prepare in advance."

One of the wooden platforms will extend the Arboretum's Skunk Cabbage Bridge that crosses over a Wingra Woods stream emptying into Lake Wingra. Arboretum Director Gregory D. Armstrong said the wooden platform will provide better access for education and nature walks.

"It will be a place for tour groups to stand, and gather around a tour leader, rather than being strung out in single file as is now the case," he said.

-more-

Add 1--Student personnel

The second boardwalk will take visitors over the water at the University Bay Marsh near Nielsen Tennis Stadium. The 1918 Marsh (so-called because of a Class of 1918 gift to restore it) is a favorite place for area birdwatchers to observe waterfowl and marsh birds.

The boardwalk construction is being supported by the Madison Audubon Society and the Wisconsin Wetlands Association (WWA).

According to James H. Zimmerman, WWA co-founder and lecturer in UW-Madison's department of landscape architecture, the eight-acre marsh provides nest sites for 17 species of birds including bitterns, black terns, yellow-headed blackbirds and several kinds of ducks.

The marsh also harbors frogs, turtles, muskrats and mink, he said, noting that "from the boardwalk, kids could get down and look into the water and get a little glimpse of wildlife."

The 1918 Marsh boardwalk will be dedicated at a 3 p.m. ceremony on the site on Wednesday (May 6). Nina Leopold Bradley, daughter of late UW-Madison author and ecologist Aldo Leopold, will speak at the dedication. National Park Service Director William Penn Mott also will be present.

A sign commemorating the marsh and the work of the Conservation Corps will be dedicated at the ceremony as well. Fish Building Supply donated materials to build the sign.

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-- Inga Brynildson (608) 262-9772

uw news

Arboretum

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 3/17/87

CONTACT: Det. Herbert Hanson (608) 262-3903

ARBORETUM MAILBOX EXPLOSION HURLS METAL ACROSS SEMINOLE HIGHWAY

MADISON--An explosive charge planted in a mailbox at the Seminole Highway entrance to the University of Wisconsin-Madison Arboretum caused an explosion Monday evening that blew one end of the box 92 feet, a campus Police and Security spokesman said Tuesday.

Detective Herbert D. Hanson said the force of the blast was strong enough to send part of the box into an area resident's yard and another part of the box more than 75 feet into the university's property. The diameter of the explosive device was 1 and 7/8 inches and the end caps were made of PVC piping material, Hanson said. "It was a big dangerous device," he said.

"The potential for injury was incredibly great" and it was fortunate there were no joggers, cyclists or motorists in the area at the moment of the blast, which occurred between 9 pm. and 9:10 p.m., Hanson said.

An area resident looked out her window, saw fire on the ground, and a few moments later saw a car coming from the Arboretum, Hanson said. She reported a small, box-shaped vehicle stopped, backed up, and then left the area, he said.

Monday night's incident was the second involving explosives in the Arboretum in six months. Hanson said last October an explosive charge was set in the middle of a fire lane on the Grady Tract. The blast cleared a twelve-foot area, he said.

County law enforcement officials have had reports of other mailbox explosions, but they have been mostly in more rural areas and involving less explosive force, Hanson said. Campus security personnel are continuing to investigate the incident and anyone with information should contact university police at (608) 262-TIPS. Calls can remain anonymous.

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Announcing

Restoration Ecology: Theory and Practice

Madison, Wisconsin
October 11–12, 1984

Carol Gubbins

A symposium to explore the value of ecological restoration as a technique for basic research, and to examine the role of experimental and theoretical ecology in the development of the science and art of community and ecosystem restoration.

Restoration Ecology: Theory and Practice

This symposium will commemorate a half century of restoration research at the University of Wisconsin Arboretum by exploring the ways in which restoration raises basic questions and challenges our fundamental understanding of the communities and ecosystems we are attempting to restore.

To do this, we will bring together a group of distinguished scientists, most of whom have had direct experience in restoration, to discuss the fundamental questions limiting the success of restoration efforts, and also ways in which the process of restoration itself might be developed as an experimental technique to answer these questions.

It is this development of restoration as a technique for basic research leading, in turn, to improved restoration techniques based on deeper insights into community structure and function, that we have termed restoration —or synthetic—ecology.

Speakers will address basic questions and issues pertinent to restoration, including:

- the role of soil and climatic factors in community development
- introduction of species
- community structure and species diversity
- assembly of communities
- plant-soil interactions, nutrient cycling and mycorrhizae
- competition
- succession
- the role of disturbance, fire

In addition to a program of invited speakers, the symposium will include a poster session dealing with all aspects of restoration. Those interested in presenting a poster exhibit should submit an abstract by September 1.

Restoration Ecology: Theory and Practice has been planned for scientists, managers, administrators, and others interested in ecosystem restoration and prospects for its development.

Major costs for this symposium have been underwritten by the Knapp Fund, the University of Wisconsin Graduate School, and a UW Anonymous Fund.

"The art of land-doctoring is being practiced with vigor, but the science of land-health is a job for the future."

Aldo Leopold
1941

Speakers*

Anthony Bradshaw, University of Liverpool (ecology of land reclamation)

Patricia Werner, Michigan State University (experimental studies of plant populations)

William Platt, Tall Timbers Research Station, Florida (fire as a tool for studying forest communities)

James MacMahon, Utah State University (creation of arid communities following natural models; recovery of communities on disturbed sites)

Michael Gilpin, University of California–San Diego (construction of artificial communities to test hypotheses of community structure)

Earl Werner, Michigan State University (experimental assembly of fish communities)

Joseph Shapiro, University of Minnesota (lake restoration; biomanipulation)

Jared Diamond, UCLA (structure of bird communities, community assembly rules)

Michael Rosenzweig, University of Arizona (studies of community structure by addition and subtraction of species)

John Ewel, University of Florida–Gainesville (construction of agricultural ecosystems modeled on natural ecosystems)

Grant Cottam, University of Wisconsin–Madison (community dynamics of artificial prairies)

Mike Miller, Argonne National Laboratory (function of restored arid ecosystems; mycorrhizae)

John Aber, University of Wisconsin–Madison (restored forests as opportunities for studies of biogeochemical cycling)

John Harper, University College of North Wales (population biology, experimental approaches to the study of communities)

** Speakers are listed roughly in order of the program. Comments in parentheses describe relevant research interests and are not titles of talks.*

CCC crew beginning restoration of UW Arboretum's Curtis Prairie—1935

Housing

Blocks of rooms have been reserved for those attending the symposium at Howard Johnson's (608-251-5511) and the University Inn (608-257-4881), both within walking distance of the Memorial Union. Other campus area hotels are: the Concourse (608-257-6000), the Inn on the Park (608-257-8811), and the Inn Towner (608-233-8778). Please make your own reservations, **being sure to indicate you are attending the symposium.** A limited number of free rooms are available to students (on a first-come-first-served basis) in the homes of members of the Friends of the Arboretum. If you are interested in a free room, please check below and circle the appropriate date(s).

Registration

The registration fee is $40 through September 28, 1984. After that date the fee will be $50. The fee covers admission to sessions, lunch on Thursday and Friday, a banquet Thursday evening, and a tour of the UW Arboretum Friday afternoon.

$20.00 to attend speeches only; student $10.

Name _____

Title _____

Affiliation _____

Address _____

_____

Telephone ( ) _____

_____ I am enclosing a check for $ _____ . Please reserve space for me at *Restoration Ecology: Theory and Practice.* (Make check payable to: UW–Madison Arboretum.)

_____ I would like to present an exhibit at the poster session and will submit an abstract for refereeing by _____ (deadline September 1). The subject of my exhibit will be: _____

_____

_____ I am a student and am interested in free housing offered by the Friends of the Arboretum for the night(s) of **October 10, 11, 12** (Please circle).

Return to: Nancy Dopkins, University of Wisconsin Arboretum, 1207 Seminole Highway, Madison, WI 53711. Phone (608) 262–2746.

2500–4L4A079–84

University of Wisconsin–Madison Arboretum
1207 Seminole Highway
Madison, WI 53711

Arboretum

Recreation a big part of campus life

/ Alan G. Barbian

Madison is a city famous for its parks d recreation programs, but "citizens" UW–Madison don't have to go off npus to enjoy some of the same portunities.

fore than 1.3 million people use the oor and outdoor recreational facilities campus every year, according to vid Berge, director of Recreational rts. "And that's just recorded use," said. Facility use is expected to rise in this year.

erge is in charge of all recreational grams and facilities on campus. Prior 984, the programs and facilities were arate and operated independently. w, they all come under the umbrella he Recreation Sports Department.

Our Town

THE UNIVERSITY

Recreational facilities include the South East Recreational Facility (SERF), Armory (The Red Gym), Nielsen Tennis Stadium, Natatorium and Camp Randall Sports Center, plus numerous other gyms, tracks, and playing fields around campus. Berge also oversees the intramural sports programs, sports and recreational clubs, and informal sports which include personal workouts by students, faculty and staff.

Two years ago the Recreation Department sponsored a survey on facility usage. Eighty-five percent of the students who responded said they used the facilities, along with 65 percent of the faculty and staff.

"That's astounding; it really speaks well of the physical state of our students and staff," Berge said.

Part of Berge's job is juggling facility use between the physical education and dance department and the Division of Intercollegiate Athletics. "Nobody is ever happy with the schedules; if they were, then one program would be getting more than one of the others," he said.

Intramural programs also are squeezed into the mix. These programs are comparable to the Madison city sports leagues, but open only to UW–Madison students, faculty and staff. Winter programs include volleyball, ice hockey, basketball, and indoor soccer, among others.

The Recreational Sports office publishes a complete intramural calendar in its Recreational Sports Participant Handbook, for those who crave intramural competition.

But if a quiet walk, jog or ski through the woods is more your style, the university's Arboretum or Picnic Point may be the answer.

According to Arboretum Director Greg Armstrong, about 100,000 people annually visit the two square-mile tract of land on the south shore of Lake Wingra. The Arboretum includes woods, prairie and marshland.

"We are often used as a park, and we encourage people to visit the Arboretum," Armstrong said. "But we are not a park, we are a research and teaching facility."

The Arboretum boasts over 25 miles of trails for hikers or cross-country skiers. Winter highlights include the Leopold Pines, a restored pine forest named after pioneer conservationist Aldo Leopold, who guided early development of the Arboretum; the Curtis Prairie, the world's oldest restored prairie, recreated on derelict farmland since 1934; and the Lost City forest, site of an early development project that failed in 1922. Some trails follow the old street routes in that area.

The Arboretum is teeming with wildlife. This time of the year the prairie is alive with migrating birds feeding in tremendous numbers. "It's the biggest bird feeding operation in the city and its the way nature intended it to be—natural," Armstrong said.

The Arboretum will offer a myriad of classes and public outreach programs this winter. A list, which includes fees for classes, will be available Dec. 15 for programs in January through March. Copies are available from Donna Thomas, at 262–5522, or at the McKay Center at the Arboretum.

Closer to campus is Picnic Point, a peninsula on Lake Mendota's southwest shore. Picnic Point has miles of walking trails, picnic areas with campfire pits, and lots of room to retreat from the stress of working or studying. Parking is available for easy access to the Point. Or the ambitious can start at the Memorial Union and walk, run or pedal the two-mile lakeshore path to reach the gate to the point.

UW–Madison has more than eight miles of bike trails that run along busy thoroughfares, down narrow side streets, and quietly past Bascom Woods along the south shore of Lake Mendota. Bicycling is an important part of the fabric of the city and the campus for most of the year—on an average fall day, about 12,000 people ride bicycles on campus.

In addition to the gymnasiums, swimming pools, tennis stadium, indoor running tracks and acres of practice fields, UW–Madison has its own sailing club, swimming beaches, bowling alleys and social clubs, just to name a few.

"Just about any kind of recreational activity people want to do, they can do here," Berge said.

SIERRA Nov./Dec/1985

THE PRAIRIE MAKERS

Restoring an ecosystem is a project of imposing proportions–a collaborative effort that begins with a miracle as small as a seed.

JOHN J. BERGER

University of Wisconsin Arboretum; inset: Jim Brandenburg

When fire—what the Indians called "the red buffalo"—storms across a prairie, eco-invaders are snuffed out and natives have more room to grow. Naturalists at the University of Wisconsin Arboretum rediscovered the value of this ancient "technology" in the 1940s, and now prairie burns are regularly planned and set.

Jim Brandenburg

People have been coming to the aid of prairies for more than 50 years. A volunteer at the Fermi project (left) gathers seeds from thriving grasses to plant next season. At right, Aldo Leopold (second from left) and others help control one of the first burns at the University of Wisconsin's Curtis Prairie.

WHIPPED BY spring winds, the fire roared across Wisconsin's Curtis Prairie, sucking air into the firestorm at the center of the blaze. During the two minutes it took the fire to roast the buff-colored prairie, flames leapt 25 feet into the air and exploded through the tall, dry grasses. Gray smoke billowed high, visible for miles. As the acrid smell of burnt grass drifted away, the Curtis Prairie lay charred and sterile-looking.

No one was dismayed to see the prairie go up in smoke, however. The prairie fire at the University of Wisconsin's arboretum in Madison had been carefully planned and set. In fact, it is a regular event, reminiscent of the vast, primeval prairie fires that once swept across the American plains, ignited by lightning or Indians. A prairie fire could race from northern Illinois into Indiana, leaping creeks until the wind turned or it came to a major river. Those huge conflagrations were often visible many miles away on the Great Plains. Early settlers in the Mississippi Valley remarked on the eerie and beautiful way distant tongues of liquid fire festooned the night sky.

Prairie ecologists now believe that fire is beneficial to native prairie and necessary for its survival. Roots and seeds of prairie plants beneath the soil survive the blaze, as do many prairie animals. Fire removes the thatch of dead prairie grass that interferes with new plant growth and shields the ground from the sun's warmth. Most important, the fire kills trees, weeds, and other competitors of the prairie community.

Much of this country's wealth depends on its bounteous agriculture, which in turn depends on a generous national inheritance: soils formed and enriched by prairie plants and animals. Prairie vegetation retained water and prevented erosion, even during violent rains. Hundreds of plant species and thousands of insects, birds, mammals, reptiles, amphibians, bacteria, and fungi inhabited the prairie. The bison is perhaps the most familiar prairie animal, yet prairies were also home to elk, pronghorn antelope, white-tailed deer, plains bighorns, wolves, coyotes, foxes, squirrels, shrews, black-tailed prairie dogs, prairie chickens, meadowlarks, and prairie falcons. Brooks and prairie pools were filled with sunfish, minnows, turtles, and tadpoles.

America once had 700 million acres of prairie. Grass grew taller from west to east across the continent along a gradient of increasing moisture. In Illinois, the "Prairie State," the grass grew 10 to 12 feet high, and early settlers had to mark their paths with cairns to reduce the chances of getting lost.

Settlers told of waving grass stretching to the shimmering horizon. Beneath sunny skies the rolling land was a sea of shining color, a mosaic of flowers ever-changing as the seasons progressed. The blooms transformed the living prairie carpet from early, timid greens through a kaleidoscope of colors until the russets, tans, and golden browns of autumn suffused the land.

This enormous prairie biome is now almost extinct, thanks to the sodbuster's plow and the developer's bulldozer. Only a few scattered prairie relics are left—less than 1 percent of the original ecosystem—mainly within protected areas such as parks, refuges, and old cemeteries.

Even before the turn of the century an awareness of what had been lost had already dawned in the minds of several prominent naturalists and ecologists. A few small-scale prairie plant restorations were attempted between the 1880s and the 1940s, such as those by midwestern landscape architect Jens Jensen. But in general little attention was paid to the early advocates of prairie restoration, and even less was known about how to achieve their goals.

Concern about the destruction of America's native plant and animal communities grew during the Depression as widespread ecological damage became more apparent. The nation's great prairies were almost gone by the 1930s, the virgin forests of the Great Lakes region had been clearcut, and the calamitous soil losses of the Dust Bowl darkened skies in the Southwest.

These developments were very much on the minds of ecologists at the University of Wisconsin in 1934. At the arboretum's dedication that year, ecologist Aldo Leopold urged the university "to reconstruct a sample of original Wisconsin—a sample of what Dane County looked like when our ancestors arrived during the 1840s." Leopold and others felt that the arboretum should do more than warehouse individual plant species in a living museum; it should try to re-create natural communities. As part of this effort, in 1936 Leopold hired Theodore M. Sperry, a young prairie ecologist, to restore a 60-acre arboretum field to native prairie.

The arboretum was then the site of a Civilian Conservation Corps encampment, and Sperry directed the unskilled recruits in prairie-making. Corn stubble still stood on the land, surrounded by quack grass and ragweed. Because so little was known about prairie re-establishment, Sperry re-

Jim Brandenburg/DRK Photo

University of Wisconsin Arboretum

lied on the results of experiments performed by the students of botany professor Norman Fassett. The best prairie restoration method they had found was to transplant whole sods from existing prairie. Accordingly, Sperry and his crew drove trucks to the east side of the Wisconsin River opposite Prairie du Sac and dug up plants from a gravelly native prairie remnant.

By the spring of 1936 they had planted 25 tons of prairie sod, but a severe summer drought followed and only 3 percent of the plants survived. Sperry persisted in his restoration efforts, however, and by the time he left the arboretum in 1941 he had reestablished 42 different prairie species in segregated single-species stands—a patchwork quilt of prairie vegetation.

While later prairie devotees would deplore the fact that Sperry had ransacked virgin prairie to accomplish his mandate, some of the prairies he dug up were being destroyed anyway. Under pressure to produce timely results for his sponsors, Sperry also seems to have viewed his task more as a construction effort than a scientific experiment. This approach to prairie restoration changed radically as the years went by and the arboretum's management grew more sophisticated about restoration.

During the 1940s further experiments were carried out on the site to learn the best way to re-establish prairie, and a second stage of planting began in 1950. Sperry's days of destroying relic prairies were now long past. Much of the new planting was done by casting prairie seed into disked ground and using a cover crop to hold the soil and protect the new plants.

By the 1980s, nearly 50 years after the restored prairie was first begun, nonnative species and weeds had been greatly reduced, and parts of the prairie were comparable to and even richer in species composition than native prairies. In addition to the Curtis Prairie, a more sophisticated prairie restoration was undertaken at the arboretum by the late Henry C. Greene, an expert among experts on the seed-bearing plants of Wisconsin. Greene single-handedly produced a magnificent, natural-looking prairie—a work of art by a master botanist.

Ecologists Ray Schulenberg and Robert Betz have continued prairie restoration and conservation work in the tradition of Leopold, Greene, and University of Wisconsin botanist John T. Curtis, for whom the Curtis Prairie was named.

Schulenberg is Curator of Plant Collections for the Morton Arboretum in Lisle, Ill. In the 1950s he read Curtis' major work, *The Vegetation of Wisconsin*, and in it heard echoes of his own concern for restoring and preserving local flora using local plant stock. After corresponding with Curtis about prairie ecology, Schulenberg visited the Wisconsin arboretum prairies and eventually conducted a model prairie restoration at Lisle during the 1960s. Beginning with a badly eroded 25-acre cornfield dominated by coarse Eurasian forage plants and weeds, Schulenberg created a self-maintaining community of prairie plants native to northern Illinois, using seed he collected by hand from native prairie remnants within 50 miles of the arboretum in Lisle.

Today the Morton Arboretum prairie is lush and green in June, a polyphony of flowers through the summer, and a symphony of soft, warm tones in fall as the grasses go to seed and prepare for winter. Under the surface, soil is turning rich and dark again as it is improved by the legumes and the deep fibrous root systems of the warm-season grasses. "The prairie is building soil just the way it did before it was plowed up," Schulenberg says. The land is full of healthy prairie plants, including cream and white wild indigo, rattlesnake master, leadplant, wild hyacinth, yellow coneflower, false sunflower, big bluestem, little bluestem, coreopsis, golden Alexander, shooting star, and perhaps 105 other species Schulenberg introduced. The prairie is used for educational purposes, and serves as a refuge for endangered local plants and insects.

In 1961, about a year before Schulenberg began restoring the Morton Arboretum prairie, he met Robert Betz, a biology professor at Northeastern Illinois University in Chicago. Betz is a robust, full-bearded man of 61. Though modest, he is something of a Renaissance man, with a B.S. in biology, an M.S. in bacteriology, and a Ph.D. in biochemistry.

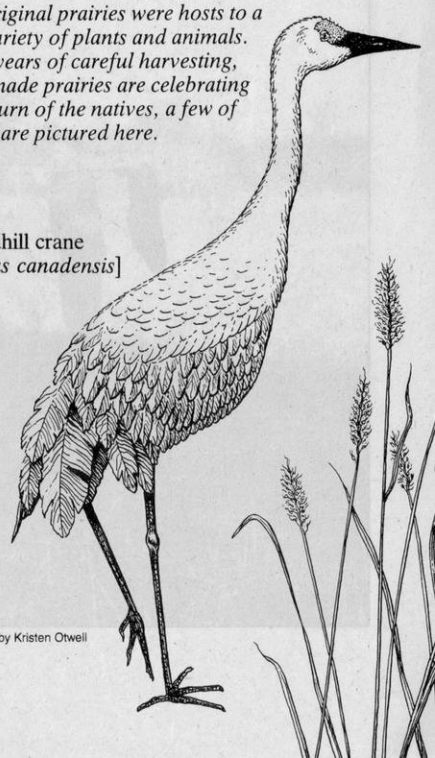
It was not until he was 37 years old and already a professor that Betz learned about prairies. Floyd Swink, a plant taxonomist from the Morton Arboretum, was leading a group of students on a field trip in 1960 when Betz, then teaching an ornithology class, decided to go along. "For the first time, I saw a real prairie—and fell in love with it," he says. "Prairie was the thing I was always looking for."

As soon as he recognized that these were the native plants of the region and that he was seeing what the Indians had seen, Betz was awed. "I got this feeling of something that went all the way back for thousands of years," he says. "This was what the real vegetation of Illinois was like."

University of Wisconsin Arboretum

In 1936, Theodore Sperry and a CCC crew began making prairie at the University of Wisconsin. In retrospect, Sperry's methods are considered unorthodox, but he took a field and made it bloom.

The original prairies were hosts to a rich variety of plants and animals. After years of careful harvesting, man-made prairies are celebrating the return of the natives, a few of which are pictured here.



Sandhill crane
[*Grus canadensis*]

Illustrations by Kristen Otwell

Betz has been searching the land for prairie remnants ever since. He soon realized that there was little prairie left and that every morsel was in jeopardy. Shortly after seeing his first real prairie, Betz met Ray Schulenberg and a mutually beneficial collaboration began. "Ray not only has the intellect and intelligence, he has the fire a real prairie person has to have," Betz says.

When Betz and Schulenberg discovered that none of the prairie remnants they visited were safe from development, they began trying to save prairies. For Betz this led to more than 20 years of unpaid and spare-time labor on prairie remnants, including countless hours cutting out blackberry bushes and pulling ragweed from sunup to sundown. With some weeding, brush removal, and managed burns, these often degraded relics could be returned to high-quality prairie. "You can't just go to school and read books about prairies," Betz says. "You have to spend time and get dirty and get tired and go home half dead working on them. Ray was the same way; we're successful partly due to the fact that we did this. When you work with these plants, you know each one on an intimate basis."

While at a national prairie conference in 1972, Betz heard from taxonomist Swink that the Morton Arboretum had been approached by Fermi National Accelerator Laboratory (then under construction) to provide the facility with landscaping assistance. Betz was dismayed. "You mean to say they're going to take that thing and plant a lot of biological monstrosities? Why don't they turn it back into prairie the way it should be? The soils are all there!" The idea may have been compelling to Betz, but convincing a high-energy accelerator laboratory that it should not only allow but actually sponsor three ecologists to build something as anachronistic as a prairie was another story.

Some months later, Betz, Schulenberg, and the late David Blenz of the Cook County Forest Preserve arranged a meeting with laboratory director Robert Wilson. Betz talked passionately about prairie, its beauty and appeal for him. It was everyone's heritage in the Midwest, he said, and he spoke of its possible scientific and medical value. "Some of these plants, with their glycosides and alkaloids, may hold a key to solving diseases. They've never really been tested adequately." Betz did not fail to convey his basic motivation for saving prairie: "Ray and I both had this feeling that it was immoral to destroy nature, the thing that gave us birth. To destroy all these animals and plants and the whole community without one whimper was wrong. We were not going to see it go down the drain without a fight."

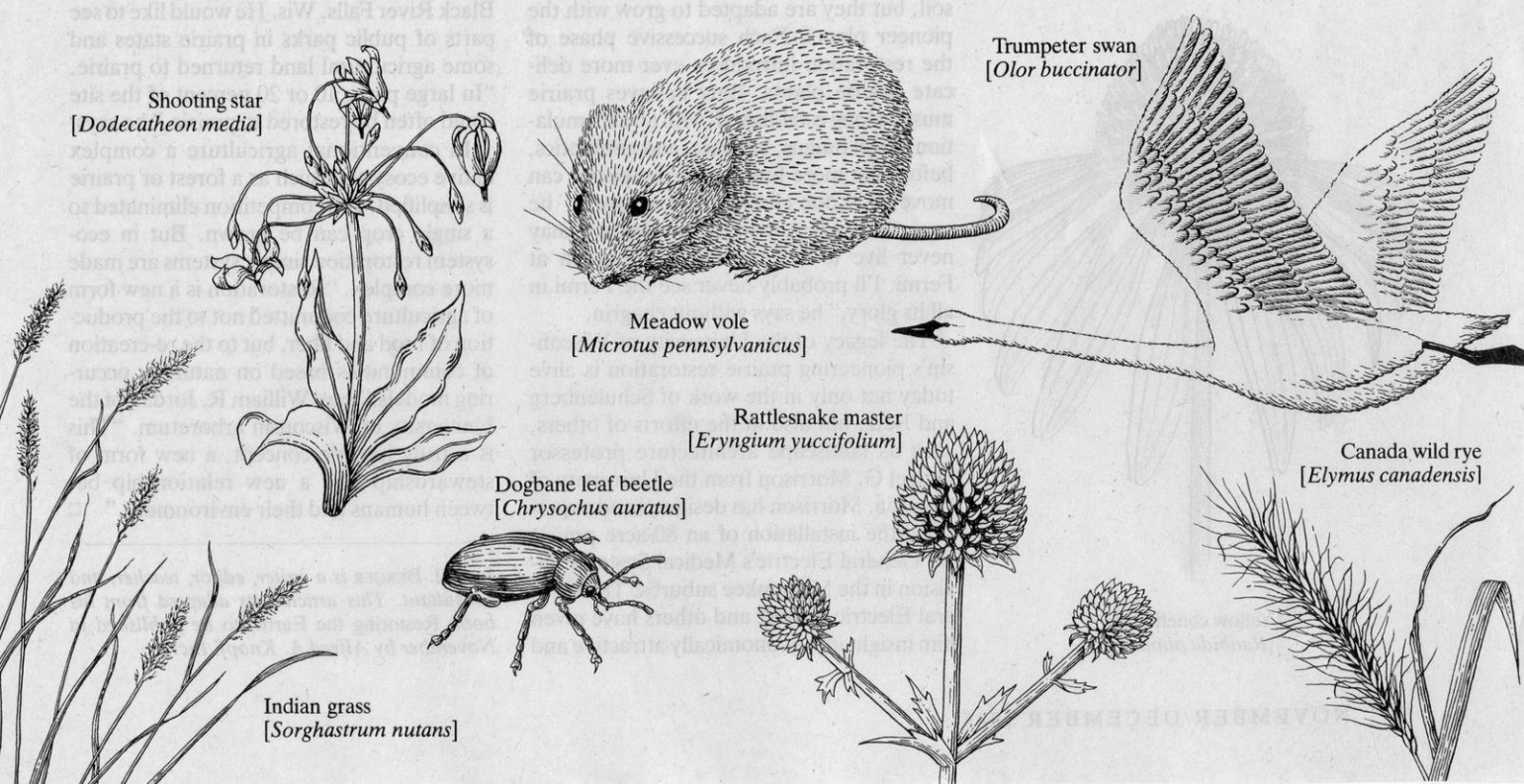
The prairie proposal was formally submitted to the lab through the Illinois chapter of The Nature Conservancy. The laboratory granted permission to create a prairie on 650 acres of land in the center of the new proton accelerator ring in front of the facility's main building.

Until that project, prairie had been restored largely by hand, a few acres at a time. But if Betz and Schulenberg worked at that rate, it would be a hundred years before the Fermi prairie could even be planted properly. A new technology for prairie restoration was obviously needed, and Betz rose to the occasion. He saw that the same equipment that had been used to destroy the prairie could now be used to rebuild it. "This was one of the first times anyone ever used agricultural equipment on a large scale to build a prairie," he says.

Even with mechanization, the restoration presented enormous problems. Because Betz and Schulenberg insisted on using only locally adapted prairie seed, they had to organize a major collection program. More than a hundred volunteers collected about 400 pounds of prairie seed by 1974. The following spring it was used to plant eight of the 650 acres at Fermilab with 40 to 50 different prairie species. After the ground had been repeatedly plowed and disked to get rid of as many weeds as possible, seed planting was done with a Nesbit drill (an older piece of farming equipment).

At first, says Betz, "the weeds grabbed that land, and we had towering ragweed, we had lamb's-quarters, we had daisies, we had thistles, we had everything." Betz then gave an informal tour of the area for state and private-sector conservationists, and he had to get down on his hands and knees to show them the tiny tufts of prairie plants that were just beginning to poke through the soil. Many of the conservationists "just wrote the whole thing off," he says. But he knew from his more than 15 years of fieldwork that to get established, prairie plants grow downward before putting out much above-ground growth. He also knew that because they had been exposed to the forces of natural selection on the prairie for thousands of years, the prairie plants were far better suited to thrive in the region than nonnative weeds.

"I knew the prairie was working from within, and I said, wait 'til those little ones grow. These weeds don't know what's in store for 'em. And sure enough, the second



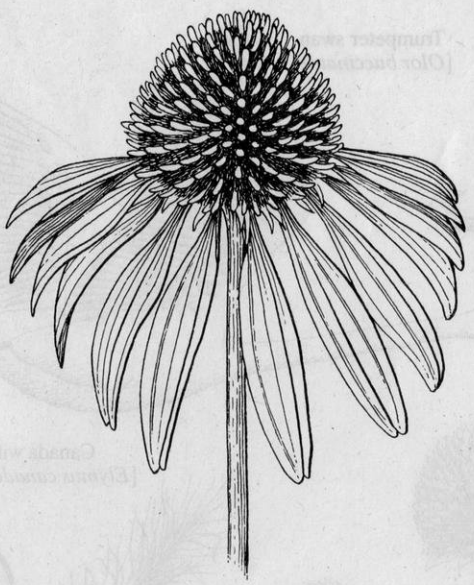
year, all of a sudden these tiny little fellows started to grow, especially the grasses, and within about two to three years the grass got tall and thick; we were able to burn it, and with the fire as an ally, the prairie just rolled over those weeds and cleared 'em all out!"

"The next year [1976] we put in seven acres," Betz continues, "then nine acres, then we jumped to 30. Then we jumped to another 30 [in 1979]." During this time he was continuously experimenting with new methods of cultivation. The Nesbit drill was eventually retired for a modified highway salt-spreader. After three or four years Betz and his crew were able to begin collecting seed on their own prairie plot.

Despite all these gains, the volunteers on whom the project largely depended were beginning to become discouraged with the seemingly endless labor required. "Why isn't all the seed in?" they would say after a season of backbreaking toil. And then they'd disappear.

"It looked like the work would never end," says Betz, "and people lost interest and thought it was a failure." But as more and more volunteers defected, Betz' determination held up. "Tony Donaldson worked on this, and he and I kept it alive," he says. "I told myself, we'll have that prairie at Fermi if I have to go and push those plants up from the roots!"

Betz then decided to hold a little reunion to thank all the people who had assisted in the project. Way out in the center of the prairie, he gave an informal talk and progress report. "It was August, and the grass stood six to seven feet high with the compass plants blooming. It was a beautiful thing to see," Betz recalls. "They began to realize it was going to be a success, and that



Yellow coneflower
[*Ratibida pinnata*]

turned the thing around. They reorganized the committees that had essentially disintegrated, and there's been a resurgence that's moved forward ever since."

To reduce the human labor required, project members began harvesting seed with a combine so they could collect it on 30 or 40 acres instead of just nine. In 1981 they gathered enough seed to plant 90 more acres of prairie, and by 1983 they were planting 120 acres and collecting 12,000 pounds of seed from their own prairie. More than 300 acres of prairie have already been planted, and the project's pace continues to quicken. The Fermilab prairie is now the largest restored prairie in the United States, and it is one of the few places in the country where both wildlife and habitat are being restored at the same time.

Native sandhill cranes will be reintroduced, and seven native trumpeter swans are already established in ponds on the prairie. They have adapted readily to their surroundings and may eventually produce an indigenous flock. Betz is also planning to reintroduce prairie insects at Fermi, especially those without functional wings, which might have a hard time returning to the restored prairie. He will also reintroduce Franklin's ground squirrel, a native prairie dweller.

In the course of his Fermi work, Betz has come to realize that prairie needs to be restored in phases. The first phase of "pioneer" prairie plants that invade newly disturbed ground are aggressive and competitive. They can overcome foreign weeds. A second phase of less competitive prairie plants can then be interseeded among the first. These could not have survived with the weeds, and would not thrive alone on bare soil, but they are adapted to grow with the pioneer plants. Each successive phase of the restoration introduces ever more delicate prairie plants. Betz believes prairie must be long established, with an accumulation of soil fungus, bacteria, and antibiotics, before the more finicky prairie species can move in. "I don't know all the answers," he says, "but we're working on them. I may never live to see the last wave go in at Fermi. I'll probably never see the Fermi in all its glory," he says without chagrin.

The legacy of the University of Wisconsin's pioneering prairie restoration is alive today not only in the work of Schulenberg and Betz, but also in the efforts of others, such as landscape architecture professor Darrel G. Morrison from the University of Georgia. Morrison has designed and supervised the installation of an 80-acre prairie for General Electric's Medical Systems Division in the Milwaukee suburbs. The General Electric project and others have given him insight into economically attractive and practical uses for the technology of prairie restoration.

Using prairie instead of lawn saved money for General Electric because the prairie cost only $300–$400 per acre to install, versus the $1,000 per acre the corporation had paid for a conventional bluegrass lawn nearby. Whereas the lawn requires mowing, watering, fertilization, and weed control, prairie requires nothing but occasional burning. General Electric's prairie management costs have been less than $5 per acre per year. According to Morrison, park departments around the country often spend $500 per acre per year to maintain mowed lawn, whereas those with prairie spend less than $50 to manage it.

Morrison advocates using prairie instead of lawn along highway rights-of-way, provided some mowed area is left so motorists can pull off the road. Roadside prairies would be beautiful and would help the prairie region retain its distinctive regional identity. In addition, says Morrison, "the interstate has eight acres of right-of-way for every mile of highway, on average, so when you eliminate mowing, watering, and fertilizer, you cut costs by 80 to 90 percent. It adds up very quickly." Less labor would be needed for lawn maintenance, but new jobs would be created in propagating prairie plants, gathering seeds, and marketing and distributing the plants.

Because they can tolerate drought, high temperatures, strong sun and wind, low soil-nutrient levels, and relatively high alkalinity, prairie species may also be valuable in the revegetation of surface mine sites. Morrison has planted various prairie grasses and forbs in iron-ore tailing deposits at the Jackson County Iron Company at Black River Falls, Wis. He would like to see parts of public parks in prairie states and some agricultural land returned to prairie. "In large parks 10 or 20 percent of the site could often be restored to prairie," he says.

In conventional agriculture a complex native ecosystem such as a forest or prairie is simplified, and competition eliminated so a single crop can be grown. But in ecosystem restoration simple systems are made more complex. "Restoration is a new form of agriculture committed not to the production of food and fiber, but to the re-creation of communities based on naturally occurring models," says William R. Jordan of the University of Wisconsin arboretum. "This is a truly historic concept, a new form of stewardship and a new relationship between humans and their environment." □

JOHN J. BERGER *is a writer, editor, teacher, and consultant. This article was adapted from his book* Restoring the Earth, *to be published in November by Alfred A. Knopf, Inc.*

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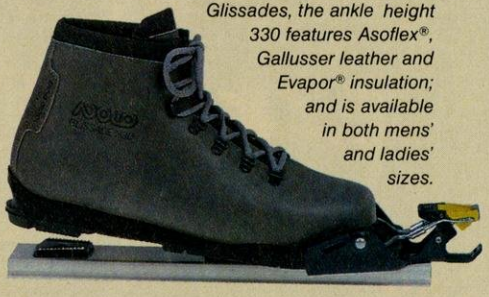

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DEVELOPING LANDSCAPES

WI. Alumnus May/June 1986

Arboretum

Since Eden, the garden has played an important role in our relationship to the earth. This spring several faculty and alumni involved in environmental work gave lectures and classes offered by the Arboretum. Conversations with them yielded information about the prairie, prairie gardening and The Garden itself.

Horticulturalist Ken Wood MS'68; Dane County naturalist Wayne Pauly MS'74; and Arboretum ecologist Virginia Kline PhD'76 are three leaders among hundreds of people who are re-creating the presence of prairie in Wisconsin.

In his book, *Restoring The Earth*, John J. Berger describes it this way: "Settlers told of waving grass stretching to the shimmering horizon. Beneath sunny skies the rolling land was a sea of shining color, a mosaic of flowers ever-changing as the seasons progressed. The blooms transformed the living prairie carpet from early, timid greens through a kaleidoscope of colors until the russets, tans, and golden browns of autumn suffused the land."

Ken Wood, who guides at the Arboretum, also teaches a mini-course there in how to grow a prairie garden.

"People became interested in backyard prairie propagation six or seven years ago. There is a three-sequence course available through the Arboretum in prairie seed collection, propagation, and management. I've always had full classes, and this spring there is a waiting list.

"In my class we talk about various methods of planting seed and how to manage the first year or two—managing weeds is a big part of that.

"Some reasons why people plant prairies is because they're beautiful; they show evolutionary adaptations; they are historical—you can have a little bit of the past; and they provide a diverse plant community. Some people think of a prairie as simpler than a lawn because you don't have to mow it. But it's not easy; you have to be dedicated. Because of all the foreign plants you have to spend the first couple of years fighting weeds.

Wayne Pauly has a degree in botany; he works half time in prairie restoration for the Dane County Parks Department and teaches prairie management.

"Brownies, Girl Scouts, 4-H Clubs help volunteer to collect prairie seeds. Last year they collected approximately 120 pounds, valued at nearly $9000. They got more than 146 different kinds of flowers and grasses, only one-third of which are available commercially," he said.

"I have been building prairies in Dane County for fifteen years. The originals were planted by the naturalist Rosemary Fleming. Now there are more than forty acres of natural and restored prairie out of some 3000 acres of county park land.

"There are more than 400 different kinds of prairie plants in North America, some of which take up to four or five years to flower. Preparing a prairie is done just like any farmer would prepare his field. The land is treated with *Roundup*, a herbicide that doesn't leave residue in the soil. At the end of May or early June the earth is plowed, disked and dragged. Then seeds are hand-scattered and the earth is dragged again. The growth will be burned off the next spring and for five springs in a row. After that we can drop to a two- to three-year burning schedule.

"There is very strong support for this kind of restoration in the county because it produces four to five acres of wild flowers in what had been solid quack grass. Then the birds start coming in and the butterflies add another level of attractiveness."

On a cold, gusty day in late March the

BY ELLEN RULSEH, ASSISTANT EDITOR

DEVELOPING LANDSCAPES

CONTINUED

wind re-styles your hair the moment you step out of your car. Brittle brown oak leaves skitter across the paved sidewalk that fronts the Arboretum's McKay Center situated above an open expanse of brown-beige grasses of Curtis Prairie, the largest and oldest restored prairie in North America.

Inside the center, past the reception room with its literature, is a hallway decorated with old photographs of early Wisconsin naturalist pioneers: Aldo Leopold grips a tree, John Curtis, notebook and pencil in hand, examines a bundle of grasses, and Joseph W. Jackson, looking as stately as the trees which tower over him, leans on a cane.

"The 1270-acre Arboretum is one-third wetland and some prairie," says staff ecologist Virginia Kline. Because it was once pasture, the sixty-acre Curtis Prairie has been more difficult to maintain than the forty-acre Green Prairie, which was once corn. Each was planted in different ways and the soils are different.

"Ours is unique from most arboretums in that we restore natural plant communities. Others just label the trees with lawn underneath. Here we have a whole oak forest, a maple forest, wetlands, and several kinds of prairie. We develop the plantings and hope the native animals will get there. We are learning as we go."

Kline put a copy of *Vegetation of Wisconsin* by John Curtis (former botany professor) on the table. She opened the inside cover to an 1840 map of a "pre-settlement frame" and said, "Wisconsin was part of the Northwest Territory and had to be marked off; surveyors were required to point out the type of tree near the marker and if none, what vegetation there was. From this we learned that southern Wisconsin was prairie and oak savanna and southern hardwood forest.

"Most of the prairies have been wiped out because that's where the best corn grows; there is some prairie along the railroad track between Middleton and Cross Plains. Indians may very well have been ecological managers and set fires; perhaps it was to protect their villages, or to be able to see farther. Burnings made the prairie a better habitat for big animals. Deer are edge animals, bison are too."

I asked her if she'd like to add a bison or two to the deer herd that already thrives in the Arboretum.

"I would if the prairies were big enough. The forest wants to take over; if we had some bison they may have helped prevent that. Their wallows are depressions formed by ground-level back-scratching. Certain species of plants liked this animal disturbance."

Virginia Kline is one of four on the staff who report to director Greg Armstrong. She works primarily with people who want to do research on prairie, forests and wetlands. "Now I'm developing a long-range plan for those communities of vegetation," she said. "One category of research is geared toward restoration, another is long-term. Noe Woods is a natural oak forest. In a thirty-five-year study trees are mapped every five years; we watch which ones die and learn why they do. No one knows what will happen in the next fifty years.

"What could account for people's fascination with prairies is that we respond to open savannas—open areas with trees. We've planted such areas in our cities, shade trees and green grass. Prairie grasses have more color, pinks and rusts; they look nice with new snow. The aesthetics draw people to prairies first, secondarily they see as it as a way to save energy, to do something good for the soil.

"I know one retired couple who lived in the South and got tired of gardening all year round. They wanted seasons, and put in a Wisconsin prairie. The fact that it's part of the Wisconsin heritage is appealing.

"It was a number of years after the prairie was established that ecologists learned that spring burns discouraged European bluegrass and stimulated prairie grasses. All plants in a prairie die down to their roots in winter. The only exception are two or three small indigenous shrubs which are dormant.

"Most of our burns will be in April, a few will be in May; it varies depending on the weather. There has to be careful selection of the day. The crew will mow a large section around where they will burn. You need a permit to burn in town. Burning is a class exercise in one landscape architecture course.

"Curtis is called a tall grass mesic prairie, which means the deep soil is not too wet or too dry. Two natural prairies exist in Wisconsin, one is Avoca Prairie, owned by the Department of Natural Resources, and near the river; the other is Chiwaukee, in the southeast corner of the state; it is a Nature Conservancy project.

"The three or four acres behind the McKay Center are a former nursery which will become prairie. This will be the first such planting that's been done in some time."

At home Kline has a prairie in her front and back yards. "You can just hardly wait to see what comes out each day. I used to be a perennial gardener, but I find the prairie more exciting.

"If you burn, everything is black for a while, but then after a week or so it gets really beautiful. You don't have to water a prairie, except the first year; its a drought-resistant community and once it's established there's not much weeding. Big blue stem grass can be six to eight feet tall. My front yard prairie looks landscaped, it's framed by mown lawn, and it takes up one-third of the yard. A taste for prairies is often acquired. There's a difference between a prairie and an unmowed lawn. You need a plan approved by the city. Some yard prairies have been *grandfathered* in, but now a design is required by ordinance.

"The future I see for prairies is more and more acceptance, even internationally; next year I'm going to give a talk at the International Botanical Congress meeting in Berlin. In two weeks I'm going to Colorado to talk to people about their prairies. I've gone to New York City as a consultant to the Parks Department. Soon I expect to be going to Cleveland. It's a burgeoning interest."

THE GARDEN: A DISTINCTION IN LANDSCAPE

A Conversation With Evelyn Howell and Arnold Alanen

Evelyn Howell PhD'76 teaches a course in the history of landscape architecture. She is a plant ecologist with an interest in design, restoration and the management of restoration. She says a prairie can be restored relatively quickly. She collaborates with architects in prairie design management.

"My approach to landscaping is that plants should take their natural form, be indigenous, and live in community groupings. I am interested in the *visual essence* of natural landscapes. On the other hand, John Dickelman, a former UW professor and author of *Natural Landscaping*, is interested in the environmental *community*. There are different expressions of landscaping.

"Writers in the early twentieth century talked about why people should use native plants; there was an evocation of regionalism, the idea that nature is healthy, aesthetics. Later the notion of preservation of

"Human beings have persistently searched for the ideal environment. How it looks varies from one culture to another but in essence it seems to draw on two antipodal images: the garden of innocence and the cosmos. The fruits of the earth provide security as also does the harmony of the stars which offers, in addition, grandeur. So we move from one to the other: from the shade under the baobab to the magic circle under heaven; from home to the public square, from suburb to city; from a seaside holiday to the enjoyment of the sophisticated arts, seeking for a point of equilibrium that is not of this world."

Yi-Fu Tuan, Topophilia, *A Study Of Environmental Perception, Attitudes and Values*

species developed, and of energy conservation—you don't have to fertilize."

Arnold Alanen is a geographer whose interest in landscape includes the prairie as only one manifestation of our relationship to our environment. "Landscape history can be just as evocative as a work of art. I see the role of the garden as a utopian image. While the city and the wilderness have been seen at different times as both positive and negative, the garden has always been positive. In that there are both natural and organized elements it reflects currents in society. In the 1500s in Italy and the 1600s in France there was nothing left to chance; everything was controlled. This is like the world view of mathematics, science, logic; and it applies to architecture and the garden. Versailles is one example.

"In the current period we understand the *why* of communities of plants. The prevalence of natural landscaping enables us to see a work that is partly of nature and partly human."

Evelyn Howell: "For example, we've learned that blue and yellow flowers bloom simultaneously to attract pollinators. We're beginning to understand mechanisms in nature responsible for making an array of color contrasts attractive to both humans and pollinators. The patterns in nature are there for a purpose; the more we know about the purpose the more we can appreciate the pattern. It doesn't become boring the way tulip beds do."

Alanen: "The staggering of blooming times can be a part of a system."

Howell: "I find traditional landscaping dull and boring—suburbia—mown lawns with foundation plantings. I'm less interested in even traditional flower beds; there's not as much going on intellectually and they're not dynamic as prairies are. I enjoy watching them change."

But do the neighbors?

"Generally the reaction has been very favorable. The only thing one neighbor complained about was thistles; I removed them immediately. A number of neighbors have gotten very interested in the management, the burning; some have even put in prairie themselves. For the most part the overall reaction has been very neutral or very positive. I am aware of some negative reactions. These I handle by putting obvious borders of mown lawn around, and by explaining it was put there."

Alanen: "It was a Renaissance ideal that nothing changes. Pabst Mansion in downtown Milwaukee is an example of this; here it would be logical to introduce a formal garden.

"There is often a reason for the suburban landscape: family opportunities—such as playing ball on them. People derive status from the care of their lawn; they get the feeling of having control over what happens on their property. Another reason is that people are used to that look. They may equate prairie with neglect.

"I am very interested in the vernacular design of lawns. And I say that if popular taste deems suburban lawns as part of the good life, OK."

Howell: "I condemn them because of their use of chemical and herbicides and the problem of run-off."

Alanen: "I'm interested from a form standpoint, how it's organized. The nuances; this is what I find so fascinating.

Howell: "In developing native landscapes we have to ask, 'where do we get the sources?' Woodland collection, where people remove the plant, is one way, but there are problems with it; another method is seed collection. And there are native plant nurseries. However *ecotypes* (strains that have adapted to particular habitats) from nurseries have been developed.

"Of the canned meadow mixes, many are not native or long-lived. A prairie garden does require effort."

Alanen: "The word *natural* is something of a misnomer; most landscapes are managed to some degree.

"The UW has a tradition since the '30s of being identified with ecology; one of the first chapters of the Nature Conservancy was established here. We're leaders in botany, zoology and landscape architecture. In Waukesha GE has asked former UW professor Darrell Morrison to plant a prairie. Jens Jensen established the Lincoln Memorial Gardens in Springfield, Ill., and worked as superintendent of the Chicago Parks Department and established The Clearing in Door County.

"It's exciting to be here because of this foundation—also the Arboretum and the commitment to maintaining it. The UW has graduated large numbers of undergraduates and graduates working in public agencies."

THE CONCEPTUAL GARDEN

Campus art historian Sandy Kita describes the Japanese idea of garden.

"Mountain and water, *sansui*, is the Japanese word for landscape. *Sansui-ga* is Japanese for landscape painting. Garden and painting are really the same. Dry gardening in the Japanese yard is a statement.

"A Japanese garden is based on Japanese nature worship called *Shinto*. A key notion is of things that can and cannot be defined. There are nature spirits and water spirits. There is form versus formlessness. That's what Japanese landscape painting is. The whole notion of painting is the solid and the formless. Plants get in the way because they change. Getting rid of plants is highly logical within the Japanese context.

"Landscape paintings and the garden are the same in that they present nature as composed of definable and indefinable. Plants are not a key element. Japanese gardens have rock and sand. You get a sense of water falling by raking the sand. The garden is bare sand with a couple of rocks in it.

"It has been said that there is no difference between a Japanese garden and a strip mining site. In Japan, man completely manipulates nature in the garden. This may be because it is an island—resources are very scarce. The whole of Japan is not that big; nature is seen as controllable—bigger than people, but not that big."

Yi-Fu Tuan, who joined our geography department two years ago, is the author of

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Developing Landscapes

continued from page 7

numerous books on the subject of human nature within nature. From his office near the second-floor library in Science Hall, he shared his thoughts on gardening.

"On one side we have our biological nature; water tastes very good when we are thirsty; sleep is very pleasant when we are tired. There is satisfaction of the body. Yet in our culture there is emphasis on what we make, the artificial. As humans we put a great deal of emphasis on the mind. This attitude of mind/body is mirrored in the garden/city. It is a very difficult and paradoxical question.

"People in cities may tire of the vanity of social life and yearn for something more natural. One idea has been that Eden actually exists on earth. Columbus was looking for it in the East. Periodically he thought he found it; once he anchored at the mouth of the Orinco River in South America, which was fresh water.

"Urbanized people have dreams of a paradise they have located on earth. They may say, instead of going out there far away to find it, let's reproduce it.

"The idea of a garden is one of peace and serenity, but to create it you often have to use force; people with money tend to do this on a large scale.

"In China there is a great imperial park with thirty-six palaces, artificial lakes and islands—vast engineering projects. That's the paradox. In the art of bonsai, the dwarf garden, on one level you're reducing wild nature to something you can put in your home, you're really domesticating it. One of the tourist spots in China, West Lake, is just like a Chinese landscape painting—it's an artifact, but poets go there and write about nature.

"In contrast, the great parks in this country are Yosemite and Yellowstone where nature is preserved. I think prairie restoration reflects a sort of gentleness in Americans that is expressed in the national parks: the idea of minimal human impact.

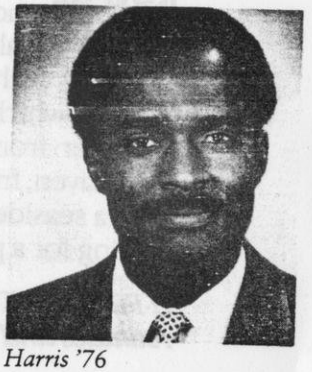
"In eastern America the Wind Gap, dried up river beds, attracted gentry. Things in nature that catch one's attention, like the Hot Springs, the Grand Canyon, were once very popular. Now things that are less attention-getting are of interest. I'm not surprised that people want to replicate prairies in their yards.

"In formal gardens you clip hedges, may have a statue; the garden is architectural. We had lawns, now prairie. There has been an evolution in our aesthetic.

"The garden is a model for cosmic harmony; in a sense the earth can be seen as a garden—as in that dramatic shot from the moon. We are increasingly aware from these images that the earth is an oasis in our solar system, the *garden* in the desert." □

Member News

Ambrose '57, PhD '63



Harris '76

ALICE R. DROUGHT '24, '26, '31 of Phoenix was named Arizona's Outstanding Senior Citizen last year. Among other services to her contemporaries, Alice is on the board of her county Senior Citizens Council and on the advisory council for the adult program at Phoenix College.

In March, our School of Business named GEORGE F. KRESS '25, Green Bay, a Distinguished Alumnus. He is founder and chairman of Green Bay Packaging, Inc.

The Jaycees Hall of Leadership now includes BEN SISSON '48 of Metairie, La. He's the retired board chairman of Jackson Borrowing Corporation, is a past treasurer and president of the Wisconsin Jaycees and former treasurer of the national organization.

HAROLD E. SCALES '49 has retired as president and CEO of Madison's Anchor Savings and Loan, but will continue as its chairman. Harold is a past president of Wisconsin Alumni Association and later served as our representative on the UW Athletic Board. He and his wife Doreen will continue to spend summers here, winters in Arizona.

In April BETTY BOBO Seiden '51, '53 of Oakland, Calif., received the Distinguished Educator Award from the Marcus A. Foster Educational Institute.

Shell Oil gave its Golden Plowshare Award to GEORGE C. PLISZKA '52, Houston. He's been with the firm since graduation, now as manager-solvents.

NELL HIMMELFARB McClure '55 left St. Paul for Chicago, and for the past year has been executive director of the Architecture Foundation, located down on South Prairie Avenue.

STEPHEN E. AMBROSE '57, PhD'63, the Alumni Distinguished Professor of History at the University of New Orleans, has been honored by the National University Continuing Education Association. He got its Creative Programming Award for his organization of an event at his university last year, "Peace in Europe: The 40th Anniversary." He is collecting oral histories from D-day participants for a book.

RICHARD P. URFER '58, New Vernon, NJ, has been elected senior managing director and CEO of Chase Manhattan Capital Markets Corp. He joined the bank in '82.

Children's Hospital in St. Paul tells us its director of development, HAROLD P. KURTZ MS'61, is in the 1986 *Who's Who in Midwest*. He's been with the hospita years and has written or edited four the hospital field.

DONALD D. ROEBER '60 of Gle Arizona, has been promoted by Hon Inc. to director-systems manufacturi support in its Phoenix plant.

EDWARD A. WIEGNER '61, '65, new senior vice president and CFO o hold International in Prospect Heigh He's been in business in Houston.

ALAN G. MERTEN '63, PhD'70 business school faculty of the U. of M to become dean of the College of Bus Administration at the University of Fl Gainesville.

The Weed Society of America has the year's Outstanding Extension Wo CHARLES W. SWANN '63, '64. He is sion agronomist at the University of G Athens. The award cites his developm educational programs for weed contr peanuts, cotton, corn and tobacco.

In Tarrytown, NY, the Hudson Ri museum complex Sleepy Hollow Rest and The Hudson River Valley Associa a new president in June. He is RICHARD HALVORSON '64 of New York City has been a principal in a consulting fir

JAMES H. BALL '67, '71, '75, South waukee, left Allis Chalmers to join Wa Bearings Corp. as manager of product opment.

The American Society of Hospital P cists, Bethesda, Md., combined three d under the new title of "professional aff and put in charge of it as vice-preside LIAM A. ZELLMER '67. He'll continue the *American Journal of Hospital Phar and Clinical Pharmacy*.

CARL W. FRIEDRICH '68 left a pri law practice in New York to join a Port Maine firm, Bernstein, Shur, Sawyer an Nelson, as senior tax partner. He'll live Scarborough.

In December, CLARKE L. CAYWOO earned the UW's first joint PhD in busin mass communications. He and his famil in Madison while he commutes to Marq University to teach business.

Army Maj. RICHARD J. KRANTZ '7 arrived for duty in West Germany with t Army Combat Equipment Group.

Add 1--newsbriefs

3/24/86 Arboretum

SPRING COURSES AT UW-MADISON ARBORETUM SCHEDULED

The UW-Madison Arboretum is greeting spring with four new course offerings for the public:

-- "Reading the Landscape: Deciduous Forests of Southern Wisconsin" will be taught by Arboretum ecologist Virginia Kline, Tuesday nights from 7-10 p.m., April 8, 15, 22 and 29. Cost: $10.

-- "The Mound Builders: Time of the Returning" is scheduled from 10 a.m.-noon Sunday, April 20, with naturalist Marion Moran. Cost: $4.

-- "Our Heritage in Plants: Folklore of Wildflowers and Trees" will be presented by Wayne Pauly on Saturday, May 17, from 9-11:30 a.m. Cost: $4.

-- "Flowering Ornamental Trees and Shrubs for the Home Landscape: Selection and Care" will be Ken Wood's topic on Saturday, May 17, from 1:30-4 p.m. Cost: $4.

Early registration is recommeded. Friends of the Arboretum receive fee discounts. For more information contact Donna Thomas, Arboretum education coordinator, at (608) 262-5522.

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POLISH HISTORY, CULTURE WILL BE TRACED IN PRESENTATION AT UW-MADISON

"The Polish Phoenix -- 1,000 Years of History and Culture" will be presented Friday, April 4, by the Polish Heritage Club of Wisconsin and the UW-Madison Slavic languages department. The multi-image, multi-media show was produced at University of Pittsburgh.

The free production begins at 7:30 p.m. in Room 204 Educational Sciences Building, 1025 W. Johnson St. Donations will be accepted. For more information, contact the UW-Madison Slavic languages department at (608) 262-3498.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: **Immediately** **2/27/86**

UW-MADISON NEWSBRIEFS

UW-MADISON ARBORETUM OFFERS ADULT MINI-COURSES

Prairie gardens and prairie management will be the topics of adult mini-courses offered by the UW-Madison Arboretum in March.

Horticulturist Ken Wood will teach "How To Grow A Prairie Garden" Saturday, March 8, from 9 a.m. to 1 p.m. Wood will feature the use of native plants in gardens and landscapes. The class is $5.50 and participants are encouraged to bring a bag lunch.

Dane County naturalist Wayne Pauly will teach "Prairie Management" on Saturday, March 15. The class will run 9 a.m.-noon and cost $4. Participants will learn to identify prairie disturbances and how to remedy them.

Both classes will be held at the Arboretum's McKay Center.

Those interested in taking a class have been asked to notify the Arboretum as soon as possible by telephoning (608) 262-5522. Friends of the Arboretum members receive a dollar discount on registration fees.

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EDUCATION STUDENT RECEIVES SCHOLARSHIP

UW-Madison educational administration student Steven Huebbe was awarded a grant covering one year's tuition at a recent reception of the Educational Administration Student Association. The grant was provided by two emeritus professors in educational administration, Lanore Netzer and Glen Eye.

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Add 1--UW-Madison Newsbriefs

9/19/85 Arboretum

ARBORETUM OFFERS MUSHROOM CLASS

The role of mushrooms and other fungi in woodlands will be the subject of a class at the UW-Madison Arboretum on Saturday, Oct. 5, from 9:30 a.m.-noon.

The class fee is $4 and advance registration is required. To register, or for further information, call the McKay Center, (608) 263-7888, by Sept. 27.

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AFRO-AMERICAN STUDIES SANDWICH SEMINAR SCHEDULED

"African History in the Collections of the Library of Congress" will be the topic of an African studies "Sandwich Seminar" Wednesday (Sept. 25) at UW-Madison. Tom Shick, an associate professor in Afro-American Studies, will head the seminar, beginning at noon in Room 1418 Van Hise Hall. Participants are encouraged to bring a lunch.

Shick, at (608) 263-2335 or 263-1642, has more information.

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OPITZ TO SPEAK ON WAISMAN SYNDROME

In a special Sept. 26 (Thursday) lecture, John M. Opitz of Shodair Children's Hospital in Helena, Mont., will speak on the Waisman Syndrome, a disorder originally observed by Dr. Harry Waisman at UW-Madison in 1967.

The lecture will be at 3 p.m. in the auditorium of the Waisman Center, 1500 Highland Ave.

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COMPETITION OPENS FOR FOREIGN STUDY GRANTS

Competition has opened for a number of graduate student and faculty grants to study abroad in 1986-87, the UW-Madison Graduate School Fellowships Office has announced.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 9/11/85

UW-MADISON NEWSBRIEFS

NOTE TO EDITORS: On the Arboretum brief, please note the registration deadline at the end of the brief.

ARBORETUM OFFERS SEED COLLECTING CLASS

How to collect and store prairie plant seeds will be the subject of a class at the UW-Madison Arboretum on Saturday, Sept. 21, from 1 to 4 p.m.

The fee for the class is $4 and advance registration is required. To register, or for further information, call the McKay Center, (608) 263-7888, by Friday, Sept. 13.

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ARBORETUM TO HOST RESEARCH OPEN HOUSE

The public will get a rare chance to learn about woodland research on Sunday, Sept. 29 when the UW-Madison Arboretum presents a special research open house.

Scientists from the UW-Madison forestry, botany and soil science departments will be at research sites in the Arboretum's Wingra and Gallistel Woods to describe and answer questions about their ongoing projects.

The open house, which will be from 1 to 3 p.m., is free, but advance registration is recommended. To register or to obtain further information, call the McKay Center, (608) 263-7888.

-more-

9/4/85

Arboretum

Add 1--UW-Madison Newsbriefs

VOLUNTEER PLACEMENT DAY IS WEDNESDAY

Representatives of more than 60 campus and community agencies will be on hand to discuss volunteer opportunities with students at Volunteer Placement Day Wednesday (Sept. 11) from 9 a.m.-4 p.m. in Great Hall of Memorial Union.

The event, held each semester and sponsored by the campus Volunteer Services Office, allows agencies that rely on volunteers to hook up with students willing to offer their time to help.

The last placement day in January drew about 1,400 students, most of whom eventually signed as volunteers with one of the agencies represented, according to organizers.

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ARBORETUM OFFERS PLANT GROWING CLASS

How to grow plants from seeds, cuttings and layers will be the subject of a class at the UW-Madison Arboretum Saturday, Sept. 14, from 9 a.m.-noon.

The fee is $4 and advance registration is required. To register, or for further information, call the McKay Center, (608) 263-7888.

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LAWRENCE MEMORIAL AWARD GIVEN TO UW-MADISON GRADUATE STUDENT

George E. Schatz, a graduate student in the UW-Madison botany department, is the recipient of the Lawrence Memorial Award.

Administered by the Hunt Institute for Botanical Documentation at Carnegie-Mellon University, the award was made on the basis of Schatz's graduate work and includes a $1,000 prize to be used for research-related travel.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 5/17/85

CONTACT: Karen Hanson, weekdays (608) 262-4889;
Debra Valeria (608) 262-4520

WOMAN ATTACKED IN THE ARBORETUM DID 'ALL THE RIGHT THINGS'

MADISON--A woman attacked by a knife-wielding man in the University of Wisconsin Arboretum Thursday (May 16) "did all the right things" in escaping the man, UW-Madison Detective Karen Hanson said Friday.

Madison Police arrested a 19-year-old Lodi man Thursday night in connection with the incident, using information provided by the woman.

Hanson, who as UW's crime prevention specialist often advises UW-Madison students on assault prevention, said the woman's actions in the case should serve as a "perfect example" for other women facing similar situations.

The woman, an avid bird watcher, drove to the Arboretum at about noon Thursday, and parked her car in what is called the Springs parking lot. Aware of the dangers of being alone in the area, the woman noted the other cars in the parking lot, according to the police report.

She then walked into a relatively secluded area of the 1,200-acre Arboretum. There, a man with a knife grabbed her and told her to take her clothes off. She screamed, and the man threw her to the ground.

The woman then yelled "the first male name that came to mind," according to the police, hoping the attacker would think the man was in the area. The attacker jumped up and ran off, and the woman rushed back to her car. She got in the car, locked the doors, and noticed that one of the cars, an older brown Pinto, was still in the lot.

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She took down the license number, and noted the car's bumper stickers "right down to what side of the bumper they were on," said UW police officer Debra Valeria, who investigated the case. The woman then drove to a friend's house and called police.

Her physical description of the attacker was "perfect," Hanson said, to his exact age and his square-rimmed glasses. Police checked the license number she had taken down, traced it to the suspect, and put his picture in a "photo line-up," where she identified it.

"As an avid bird-watcher, she often goes into somewhat secluded areas," Valeria said. "She told me that because of that, she thought a lot about what she would do in such a situation. She had almost rehearsed it in her mind, which is what we tell women to do all the time."

Hanson added: "She was aware of her surroundings, aware of what could happen to her, and had the presence of mind to get as much information as she could after the assault occurred."

Hanson said the woman's decision to scream and call out a name worked in this case, but such a decision is a personal one that a woman must make based on her own instincts.

"I wouldn't presume to tell any woman how to react in such a situation, especially when there is a weapon involved," she said. "But in this case, the woman made the right decision."

Hanson said the incident also should serve as a warning to those who assume the Arboretum is a populated, safe place.

"People should be aware that this type of assault can happen during the day in the Arboretum," she said. "Even at noon, it can be a very secluded place."

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-- Steve Schumacher (608) 262-8289

University News Service

19 Bascom Hall
500 Lincoln Drive
Madison, Wisconsin 53706

10/8/84

RESTORATION ECOLOGY STORY IDEAS

REDISCOVERING FIRE

What's involved in maintaining a restored ecosystem? Scientists once thought that restored natural communities would flourish on their own. But now ecologists face the paradox of restoring natural communities and then not being able to leave them to their own devices. For a variety of reasons, some restored prairies, forests and wetlands require a helping hand if they are to succeed. For example, one of the important early findings of botanist John Curtis at the University of Wisconsin-Madison Arboretum was that fire played an important role in the life-cycle and survival of prairies. Without fire, prairies would be choked by trees and other plants not native to the prairie ecosystem. The durable root systems of prairie plants enable them to survive fire while non-native plants succumb to the flames. Now, restored prairies are intentionally burned to keep shrubs and trees from displacing prairie species.

CONTACT: Virginia Kline, Arboretum ecologist, (608) 262-2179

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PUTTING PAST LESSONS TO WORK

The lessons of restoration ecology are being put to use as mining and energy companies work to restore surface mines and other disturbed sites. State and federal laws now require that abandoned surface mines be restored to a semblance of their previous condition. Areas that have been mined and left barren can often be revegetated, but the process is slow. By examining barren areas and the plants that establish themselves there, scientists can gain new insights that may help disturbed sites recover faster.

CONTACT: Evelyn Howell, associate professor of landscape architecture, (608) 263-6964

# # # #

THE RIGHT MIX

In the 1940s, Arboretum researchers thought they had found just the right kind of soil in which to plant their sugar maples. However, subsequent research has shown that the trees were really planted in an unusual environment. Forestry Professor John Aber says the maples were planted in nitrogen-poor soil, a type in which naturally-sown maples are rarely found. But Aber says the mistake has provided him with an ideal research opportunity: the chance to study something that would rarely occur in nature. The value of the situation, Aber says, is that the trees are now almost 40-years old, allowing him an opportunity to see how the maples fared after years in nitrogen-poor soil.

CONTACT: John Aber, associate professor of forestry, (608) 262-0533

note

Arboretum

From: University of Wisconsin-Madison / University News Service, 19 Bascom Hall, 500 Lincoln Drive, Madison, Wisconsin 53706
Telephone: 608/262-3571

10/8/84

NOTE TO EDITORS/NEWS DIRECTORS:

During the past year, The University of Wisconsin-Madison Arboretum has celebrated its 50th anniversary with a number of meetings and conferences.

Now, to cap the celebration, the Arboretum is hosting a symposium in Madison, Oct. 11-12, to commemorate a half century of restoration research at the Arboretum. Although scientific in nature, conference topics are of concern to everyone interested in restoration of natural ecosystems.

Enclosed is a story giving an overview of restoration ecology that features John Aber, who is participating in the meeting. Also enclosed are a list of other story ideas and a conference brochure. If you need additional information, feel free to contact the Arboretum's Bill Jordan at (608) 263-7889, or Terry Devitt at University News Service (608) 262-8282.

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 10/8/84

CONTACT: John Aber (608) 262-0533

RECONSTRUCTING NATURAL COMMUNITIES: AN IDEA COMES OF AGE

MADISON--The seeds of restoration ecology -- the art and science of rebuilding natural ecosystems -- were first sown in Wisconsin by Aldo Leopold and his colleagues at the University of Wisconsin-Madison Arboretum.

Leopold called it the science of "land health," and in this age of diminishing wild resources it is taking on a new importance.

The idea behind restoration ecology, according to UW-Madison researcher John Aber, is to accurately reconstruct natural communities and ecosystems such as prairies, forests and wetlands.

"There are now two approaches to the idea of preserving nature," Aber said. "One is to take wild areas and lock them up in preserves and parks, but there is a diminishing amount of undisturbed land that can be set aside now. The other approach is to recreate natural communities in disturbed areas."

Aber, a professor of forestry, views the science of restoration ecology as something more than just putting the right plants and trees in the right places. A reconstructed community, Aber said, must not only look like a natural community, it must act like one as well.

"It's like approaches taken in biochemistry," said Aber. "In biochemistry, the first step is to take an organic molecule apart to see what its components are. But then to see if you really know what it is and how it works, you reconstruct it to see if it acts just like the molecule you started with."

An example of the restoration ecologist's organic molecule would be the

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UW-Madison Arboretum. With its restored prairies and forests, the Arboretum has proven to be an important research tool over the last 50 years.

"The restoration of natural communities like those at the Arboretum is the ultimate test of our knowledge of ecosystems," said Aber. "Through the restored communities there we can begin to understand the physiological limits of species. With this information, we can then be more precise in prescribing treatments for other lands that need to be restored."

Aber said the knowledge gained from the ongoing work at places like the Arboretum now has an immense practical value. For example, old surface mines, areas notoriously slow to recover from the effects of mining, can benefit from restoration ecology research.

"Much research has been done on mine reclamation because, by law, surface mines have to be reclaimed to some degree," Aber said. "By studying phenomena like plant succession in disturbed areas, scientists can gain new insights that may help disturbed sites recover faster."

On the other end of the spectrum, research on restored prairies is enabling backyard ecologists to sow their own patches of prairie, Aber said. According to Aber, the Midwest has experienced a boom in prairie restoration in recent years.

"A lot of the work that's been done in restoration hasn't been done as research," Aber said. "It's been done simply as attempts to restore native communities. Probably the biggest group of restored communities are prairie systems in the Midwest."

Although Aber feels that as a science restoration ecology is now coming of age, he is also sensitive to the perceptions people have of restored areas.

"Some people might view a restored prairie as something artificial. They may say that you can't really learn anything from a restored prairie because it's not really a natural prairie. But to me it's very real. It may change through time, but then natural prairies also change through time."

This week, Aber and other ecologists from around the world will gather at an Arboretum symposium to commemorate 50 years of restoration research at UW-Madison. The symposium, "Restoration Ecology: Theory and Practice," will be held Oct. 11-12 and will examine the role of experimental and theoretical ecology as it pertains to the understanding of restored ecosystems.

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-- Terry Devitt (608) 262-8282

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 8/2/84

CONTACT: James P. Scherz (608) 262-9860

STATE'S WATERWAYS REVEAL ARCHAEOLOGICAL SECRETS

by ROGER PACKARD
UIR Science Writer

MADISON--The Indian mounds and rock piles that lie along the rivers and lakes of Wisconsin and the Upper Peninsula of Michigan tell a fascinating, if controversial, tale about prehistoric systems of astronomy, geometry and trade, a civil and environmental engineering professor believes.

Professor James P. Scherz of University of Wisconsin-Madison has found that the large earthen mounds, built in the shape of animals that may represent the various Indian clans, frequently line up in regular geometric patterns. By sighting from one mound to another, Indians could have used the mounds as a calendar to follow the seasons, predicting celestial events such as the solstices and equinoxes.

What's more, Scherz said his maps show that mounds, rock piles and individual rocks preserved in 15 acres of largely undisturbed woods in UW-Madison's Arboretum form a chart of the stars and may record a spectacular celestial explosion, or supernova, known from Chinese accounts to have occurred near the waning crescent moon on July 4, 1054 A.D.

"The evidence we see seems to make sense only if we assume that native Americans possessed a more sophisticated system of astronomy, and carried on more extensive trade than previously suspected," said Scherz. He admits, however, that his ideas are decidedly unpopular in archaeological circles.

Archaeologists are hesitant to accept Scherz's findings because they feel

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more evidence is needed to adequately date the various artifacts and place them in proper cultural perspective. What appears to be a pattern among artifacts may in fact be mere coincidence if the artifacts were left by different peoples thousands of years apart.

"I must have had rocks in my head when I started this project," laughed Scherz, noting the painstaking work it has entailed and the controversy it has raised. Nonetheless, Scherz said his conclusions are based on clear evidence from extensive surveying and mapping efforts.

Of the seven sites he has worked, Scherz and his surveying students have studied the Arboretum site most thoroughly because of its convenient location. But the site may prove to be more important than anyone anticipated.

Located on the shore of Madison's Lake Wingra, the site seems to fit into a pattern of trade routes along major waterways, Scherz said. Trade routes probably followed the Ontonagon and Wisconsin Rivers, connecting prehistoric copper mines along Lake Superior with sites along the Mississippi and Ohio Rivers.

Lake Wingra is as far as it was possible to paddle a 40-foot dugout transport canoe without portaging, when coming from the Mississippi River up the Rock and Yahara Rivers. Other archaeological sites around the state are also located at the extreme range of the large canoes, said Scherz.

For instance, Aztalan, an Indian site near Lake Mills in southern Wisconsin, is as far as the large canoes could have traveled up the Crawfish River without portaging. And an archaeological site that may have been a major prehistoric trading center is located south of Wisconsin Rapids where the large transport canoes could have been exchanged for smaller, birch-bark canoes, Scherz said.

Although Lake Wingra is not along the major Wisconsin River route, Scherz suggested it may have been important for other, perhaps religious, reasons. Major springs -- sources of life-giving water -- are located within the

University Arboretum on the shore of Lake Wingra. The largest of these is marked on either side by Indian mounds that may represent male and female reproductive organs, said Scherz.

The woods above the Lake Wingra springs, once probably open prairie, are littered with the rock piles and rocks that comprise Scherz's star chart. Never before thought to be of any particular significance, Scherz said his map shows the rocks to correspond to the positions of the stars, forming an enormous chart that includes most of the visible night-time sky.

Within the chart, in the region representing the Crab Nebula where the 1054 A.D. supernova was seen, lies a 200 foot long rock mound in the shape of a crescent moon. A large rock pile beside it does not correspond with any existing star and may represent the supernova. Petroglyphs in the American southwest that show a crescent moon with a star beside it are also believed by some to represent the supernova, said Scherz.

Scherz also found evidence that he said may indicate who the people were that recorded this dramatic celestial event. While preparing his maps, Scherz found a mound, partially obscured by a fence-row and previously unnoticed, in the shape of a long straight snake with a plume on its head. The snake's body points directly toward the largest spring, while the head, with a small pit for an eye, is turned to face the crescent moon in the Crab Nebula.

The snake is usually thought to represent the Sioux Indians, said Scherz. He speculated that the Sioux, whose legends hint at a migration north from Illinois before they moved west, were traveling to the spring when the supernova became visible, and they recorded the event when they arrived.

Even if Scherz's conclusions prove not to be correct, his efforts have sparked increased interest in preserving the Arboretum's ancient heritage. Efforts to protect the mounds from foot traffic and clear them of encroaching trees are beginning according to Greg Armstrong, the Arboretum's director.

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-- Roger Packard (608) 262-8282

uw news

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Arboretum

Release: Immediately 6/13/84

(NOTE TO EDITORS AND NEWS DIRECTORS: Arboretum Director Gregory Armstrong will be available for media interviews prior to both scheduled events. He will be available at 4:30 p.m. before the program and at 6 p.m. before the banquet on Sunday, June 17. Armstrong can be reached at (608) 262-2746.)

CONTACT: Bill Jordan, (608) 263-7889

ARBORETUM 50TH ANNIVERSARY TO BE OBSERVED SUNDAY JUNE 17

MADISON--At the original dedication ceremony for the University of Wisconsin-Madison Arboretum in 1934, speaker Aldo Leopold said it would take fifty years to see if the arboretum experiment would work.

Now, fifty years later, the success of that experiment will be acknowledged at rededication ceremonies Sunday, June 17.

The observance begins with a program at 5 p.m. Leopold's daughter, Nina Leopold Bradley, will reread her father's original dedication speech. Three others with arboretum and UW-Madison connections will also speak. They are botany Professor Grant Cottam, who will talk about the development of the arboretum's plant communities; wildlife ecology Professor Robert McCabe, who will talk on arboretum wildlife; and horticulture Professor Edward Hasselkus, who will speak about the horticulture of the arboretum. This part of the program will take place in a tent set up next to the McKay Center.

The celebration then will move inside the McKay Center for a banquet beginning at 7 p.m. The banquet speaker is Peter Shaw Ashton, director of the Arnold Arboretum at Harvard University.

For information on the anniversary, contact Bill Jordan at (608) 263-7889. Information on the program or banquet is available from Gene Glover at (608) 263-7760.

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--Karen Walsh, (608) 262-0065

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 5/22/84

CONTACT: Greg Armstrong (608) 262-2746

NOTE TO EDITORS/NEWS DIRECTORS: The WCC will hold a "kick-off reception" at 3 p.m. Friday (May 25) in the lab building next to the McKay Center at the UW-Madison Arboretum. WCC Executive Secretary William Brakken, Arboretum Board Member Emily Earley and crew members will be available for interviews.

WCC WORKERS SPRUCE UP UW-MADISON ARBORETUM

MADISON--The University of Wisconsin-Madison Arboretum is a product of the Great Depression. Workers from the federally-created Civilian Conservation Corps (CCC) created the 1,200-acre natural study area in the 1930s.

Fifty years later, economic hardship has again brought a group of workers to the arboretum to give it a welcome facelift. The workers are members of the Wisconsin Conservation Corps (WCC), a state program that provides employment for jobless workers in a variety of conservation projects.

"The Wisconsin Conservation Corps is modeled on the CCC and again comes in a rather difficult economic time when there's high unemployment," said Greg Armstrong, the arboretum director. "It provides work for young people who are interested in conservation and it also allows us to do some wonderful projects that otherwise would not be done."

The seven WCC workers began April 30 and are assigned to the arboretum for one year. Their activities will include planting trees and shrubs around the desilting pond off Monroe Street, expanding the Curtis prairie, constructing a new nursery, removing exotic vegetation from forests, and thinning out the Leopold pine forest.

-more-

Add 1--Arboretum

The arboretum was the site of a CCC camp from 1935 to 1941. "I have hopes that the WCC will be as significant in the history of the arboretum as the CCC was in creating it," Armstrong said.

The WCC was started in 1983 by the Wisconsin Legislature to provide jobs for the unemployed, and has been funded for two years. About 500 workers will take part in 55 to 60 projects around the state during that time. Participants must be between the ages of 18 and 26.

The five men and two women working at the arboretum come from diverse backgrounds, including construction, self-employment and mountaineering school. But all have an interest in conservation, said Shawn Johnson, the 26-year-old crew leader.

"Most of us do have an interest in preserving natural areas. That's why we're willing to work so hard for low wages," he said. WCC workers are paid minimum wage. The crew leader makes slightly more.

One of the advantages of the job is being able to work outside, the workers agreed.

"I've worked on crews with men before and I've done a lot of hard physical labor before, but not something like this," said Meagan Graney, one of the two female workers. "The work is hard and steady, but it's not backbreaking. And I like being outdoors."

Jeff Rhodes, who was unemployed for sometime, said he was grateful to be working. "I went up to the Job Service and I heard about it (the WCC) through them," he said. "So I signed up and got the job."

In addition to sprucing up the arboretum, the crew members are learning skills that may help them on other jobs, Johnson said. "We'll be doing forestry, construction, surveying, engineering, building new roads, planting trees, cutting trees -- you name it, we'll probably be doing it."

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--Barb Kucera (608) 262-2650

uw news

Arboretum

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 3/19/84

CONTACT: Bill Jordan (608) 263-7889

McCAFFREY DRIVE TO BE OPEN SUNDAY AFTERNOONS STARTING APRIL 1

MADISON--The barrier blocking McCaffrey Drive midway through the University of Wisconsin-Madison Arboretum will be opened Sundays from noon to 6 p.m. beginning April 1, Arboretum officials have announced.

The Arboretum's director, Greg Armstrong, said the decision was made so visitors could enjoy a ride through the 1,280-acre outdoor laboratory at a time when commuter traffic is minimal.

"The purpose of the barrier is not to discourage visitors, but to keep the Arboretum from being used as a commuter route," Armstrong said. "Since this is not a problem on Sundays, we feel we can open the drive then without major difficulties."

Armstrong said the new plan would remain in effect indefinitely.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 1/9/84 mb

CONTACT: William Jordan (608) 263-7888

WINTER BEAUTY AWAITS AT THE ARBORETUM

MADISON--The Arboretum has a full slate of winter offerings for area residents, including those who prefer being indoors while the sun takes its southern vacation.

For cross-country skiers, the Arboretum offers 12 miles of ski trails. To avoid damaging the Arboretum's fragile plant communities, skiers are asked to abide by the trail signs and to ski only on designated trails.

For hikers, more than 20 miles of trails are open.

Trail maps are available at the McKay Center, located at the end of Longenecker Drive in the heart of the Arboretum. The center is open from 8:30 a.m.-4 p.m. weekdays and 12:30-4 p.m. weekends.

The McKay Center features indoor and outdoor educational programs on Sunday afternoons. All programs, presented by Arboretum guides and others, begin at 1 p.m. The schedule is:

Jan. 15 -- Winter Birds, an indoor slide program.

Jan. 22 -- Winter Walk to look for birds.

Jan. 29 -- Soil, with UW-Madison Professor Francis Hole discussing the secrets of soil in an indoor program.

Feb. 5 -- Home Landscaping, first in a series of three indoor presentations.

Feb. 12 -- Chocolate Chip Geology, an indoor discussion on the composition of rocks.

-more-

Add 1--Arboretum in winter

Feb. 19 -- Wildlife in Winter, slide program on how animals adapt to winter.

Feb. 26 -- Winter Walk, following the tracks of Arboretum wildlife.

March 4 -- Home Landscaping, second in the series.

March 11 -- Photography Exhibit in the McKay Center.

April 1 -- Home Landscaping, last of the series.

April 15 -- Indian Mounds, a slide program.

April 29 -- Spring Walk, to see Indian mounds and spring flowers.

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feature story

Arboretum

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: (608) 262-3571

Release: Immediately 1/9/84

CONTACT: Gregory Armstrong (608) 262-2748

(Photo of Armstrong available from University News Service)

NEW ARBORETUM DIRECTOR GETTING REACQUAINTED

By MARK BELLO
University News Service

MADISON--For Gregory D. Armstrong, his appointment as director of the University of Wisconsin-Madison Arboretum not only marks the beginning of a new and challenging job, it also marks the renewal of a 20-year acquaintance.

During the 1960s, while studying horticulture at UW-Madison, Armstrong would visit the Arboretum for outdoor laboratory studies. When he assumed the helm of the 1,260-acre Arboretum this August, Armstrong, now 40, returned as a seasoned veteran at managing botanical gardens and arboretums -- places where trees, shrubs and other plants are cultivated for scientific and educational purposes.

And no one is more pleased with the reunion than Armstrong himself.

"This is really a great opportunity for me," Armstrong said during a recent interview. "The Arboretum is a unique place and a very important one, both on a national and international scale. With a 50-year history of restoring ecological areas, the Arboretum has much to contribute to the study of ecology and survival."

After earning his bachelor's degree in horticulture at UW-Madison in 1967, Armstrong, a native of Cooksville in Rock County, spent three years as a

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student at England's Royal Botanical Gardens and the past 12 as director of the Botanic Garden at Smith College, Northampton, Mass.

"I was kind of a one-man band," Armstrong said, referring to his range of responsibilities at Smith.

In addition to overseeing the college's formal gardens, greenhouses and arboretum -- a collection of about 3,500 different types of plants -- he taught a two-semester horticulture course, prepared landscape designs for the campus and was responsible for floral decorations at college functions.

While at Smith, he also squeezed in the time to earn a master's degree in botany.

Armstrong can focus his energies a bit more at the UW-Madison Arboretum, where for the past 50 years the mission has remained the same: to recreate the ecological communities present in presettlement Wisconsin.

But that is an enormous task for the Arboretum's small full-time staff, which includes the director, a four-person work crew, an ecologist, a volunteer coordinator, ranger and public services coordinator.

"There is room for improvement," Armstrong said, using as an example the seemingly endless battle against honeysuckle and other exotic plants that invade the Arboretum's native plant communities. "We have a tight budget, which shouldn't surprise anybody these days. So, we'll have to find innovative ways to accomplish the tasks at hand."

Armstrong said he hopes to build on the support of the Friends of the Arboretum, a 1,000-member voluntary organization that has helped finance Arboretum activities, including land acquisition.

"Volunteerism will be a much more important factor in the Arboretum's future," he said. "We will establish a more formal program for recruiting volunteers to assist in all sorts of projects."

For example, he said, volunteers are needed for the first major project undertaken during the new director's tenure -- expanding Curtis Prairie up to

the McKay Center and building a prairie-viewing platform onto the center. The expansion will require removing "an underutilized nursery" behind the center, Armstrong said.

Volunteers also are needed to serve as receptionists at the McKay Center, to help prepare Arboretum publications and to assist with field work, he said.

As director of the Arboretum, an internationally recognized center for ecological research and one of Madison's most prized attractions, Armstrong has inherited a diverse -- and occasionally conflicting -- set of responsibilities.

The Arboretum's success in recreating Wisconsin's native plant communities also makes it a popular spot, attracting an estimated 300,000 people annually. Occasionally, the visitors' activities -- hiking, biking, jogging and cross-country skiing -- are at odds with the Arboretum's research and restoration efforts.

The Arboretum director's responses to these conflicts often are judged by a large audience of local critics -- making the position, in the view of one newspaper editorial writer, one of Madison's most difficult, surpassed only by the office of mayor.

At 6-foot-3, Armstrong is used to standing out in a crowd, and he accepts public scrutiny as part of the job. He said the Arboretum is a public treasure, but added that it must be managed so that it remains a valuable and unique asset for state residents.

Armstrong and his wife, Elizabeth, live in Oregon with their three-year-old daughter, Molly, and their nine-year-old son, Miles.

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PUBLIC SERVICE ANNOUNCEMENTS

Arboretum

FOR USE: Immediately 12/7/83

Version 1: 15 seconds

THE FOUR SEASONS IN THE ARBORETUM IS THE THEME OF THE 1984 ARBORETUM CALENDAR. IT'S AVAILABLE AT THE ARBORETUM'S MCKAY CENTER AND AREA BOOKSTORES FOR $4.95. PROCEEDS GO TO THE FRIENDS OF THE ARBORETUM. FOR MORE INFORMATION CALL BILL JORDAN AT 263-7888.

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Version 2: 15 seconds

SEASONAL CHANGE IN THE ARBORETUM IS THE THEME OF THE 1984 ARBORETUM CALENDAR. PROCEEDS FROM CALENDAR SALES GO TO THE FRIENDS OF THE ARBORETUM, AND THEY'RE AVAILABLE AT THE ARBORETUM'S MCKAY CENTER AND AREA BOOKSTORES FOR $4.95. FOR MORE INFORMATION CALL 263-7888.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 10/11/83

CONTACT: William Jordan III (608) 263-7888
Gene Glover (608) 263-7760

1984 ARBORETUM CALENDAR NOW AVAILABLE

MADISON--Following the seasons as they unfold in the University of Wisconsin-Madison Arboretum is tne theme of tne 1984 Arboretum calendar.

Prepared by members of the Friends of the Arboretum, a volunteer organization with more than 1,000 members, the spiral-bound calendar's photographs and text chronicle the seasonal changes in the plant and animal communities of UW-Madison's 1,280-acre outdoor teaching and research laboratory.

The Friends of the Arboretum have dedicated the calendar to Katharine T. Bradley, arboretum director from 1974 until her retirement earlier this year.

In addition to the Arboretum's wildlife, the calendar's 39 black-and-white photographs highlight scenes from the Arboretum's forests, prairies and wetlands.

In commemoration of tne 50th anniversary of the Arboretum's dedication, tne calendar introduction describes the efforts leading to the Arboretum's creation, including the work of the Civilian Conservation Corps. The CCC workers carried out the first projects leading to the university's goal of restoring the tract to the conditions that existed in Dane County when the first settlers arrived here during the 1840s.

The calendar's narrative, written by Sue Bridson and Martha Durkin, will keep calendar owners attuned to seasonal changes taking place in the Arboretum throughout the year.

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During the frigid days of January, for example, readers are advised to look for a "red-tailed hawk perched on a branch by road or open field; crossbills getting seeds from alder or tamarack cones, evidence of browse by deer or rabbits; and tracks in the snow made by skunk, deer mice and other animals."

Poetry, written by Mary Ellen Gerloff, accompanies the narrations.

The calendar was designed by Annette H. Durkin and edited by Jeannette Van Vonderen. William Jordan III, head of the Arboretum's McKay Center, wrote the introduction describing the site's beginnings.

Proceeds from calendar sales go to the Friends of the Arboretum. The organization provides the Arboretum with money for supplies, research and various other needs.

The calendar costs $4.95 and is available at local bookstores and the Arboretum's McKay Center. Calendars may be ordered through the mail by sending $6.15, which includes tax and the cost of handling, to: Calendar, UW Arboretum, McKay Center, 1207 Seminole Highway, Madison, WI 53706.

###

Mark Bello (608) 262-8282

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 11/2/83

CONTACT: Gregory Armstrong (608) 262-2746

ARBORETUM'S LAST DESILTING POND TO BE BUILT

MADISON--Construction of the sixth and final desilting pond in the University of Wisconsin Arboretum will begin Monday (Nov. 7), the university has announced.

The "dogleg-shaped" pond will be built in a forested area adjacent to Nakoma Golf Course near the intersection of Manitou Way and Nakoma Road, according to Gregory Armstrong, the Arboretum's new director. It will not be "nearly as visible" as the desilting pond built near Monroe and Glenway streets earlier this year, he said.

Creating access for earth-moving equipment will require removing a 15-foot-long section of a stone wall that lines the Arboretum along Monroe Street and Manitou Way, Armstrong said. Upon completion of the $15,000, two-month-long project, the wall, built by Civilian Conservation Corps members during the 1930s, will be restored to its original appearance, he said.

"We are sorry to disturb the area at all," Armstrong said, "but the ecological benefits from the pond will outweigh by far the short-term disturbance."

Armstrong said the area surrounding the pond will be "revegetated in an appropriate fashion."

The pond, about 100 feet wide and 400 feet long, will catch surface water draining into the Lake Wingra basin and runoff from a City of Madison storm sewer. It and the five other ponds are designed to prevent storm-water runoff, laden with silt, sand, trash and some chemicals, from damaging the Wingra Marsh and polluting Lake Wingra.

UW-Madison will pay for its construction.

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--Mark Bello (608) 262-8282

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 11/4/83

CONTACT: Gregory Armstrong (608) 262-2746

WORK ON ARBORETUM DESILTING POND DELAYED

MADISON--Construction of the University Wisconsin Arboretum's sixth desilting pond, origninally scheduled to begin Monday (Nov. 7), will be delayed until the ground freezes, Arboretum Director Gregory Armstrong said Friday (Nov. 4).

Delaying construction until after the ground freezes will minimize damage from the traffic of heavy earth-moving equipment at the site, Armstrong said. Arboretum officials had set the construction date anticipating that the ground would be frozen by early November.

The desilting pond, to be built in a forested area adjacent to Nakoma Golf Course near the intersection of Manitou Way and Nakoma Road, will intercept urface water draining into the Lake Wingra basin and catch runoff from a City of Madison storm sewer.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 6/28/83

NEW ARBORETUM DIRECTOR, GREGORY ARMSTRONG, TO ASSUME POST IN MID-AUGUST

MADISON--Gregory D. Armstrong, 40, director of the Botanic Garden, arboretum and greenhouses at Smith College, Northampton, Mass., has accepted the post of director of the University of Wisconsin-Madison Arboretum, the university has announced.

Armstrong, who grew up in the small Rock County community of Cooksville, will assume the post in mid-August, he said.

"I'm very excited about the prospect of taking up this job," he said, "and have great hopes for the future of the Arboretum."

He succeeds Katharine T. Bradley, who retires June 30.

Armstrong received his bachelor's degree in horticulture from UW-Madison in 1967, a Kew Diploma in 1970 from the Royal Botanic Gardens, Kew, Richmond, England, and a master's degree in botany from Smith College in 1980. He worked chree years at the Royal Botanic Gardens and has been at Smith College since 1971.

Armstrong was selected by Chancellor Irving Shain from three persons whose names were forwarded by a search and screen committee that included Arboretum Committee members, a university spokesman said.

The Arboretum, 1,260 acres on Madison's south side, is a research facility with as many as 60 faculty and student projects in progress at a time. It also draws about 300,000 visitors a year for hiking, biking and cross-country skiing, a mixed blessing to those trying to reconstruct, preserve and manage

-more-

an aboriginal example of woods, marsh and prairie.

Armstrong's duties at Smith included managing an arboretum, several gardens and a range of greenhouses. He was responsible for campus landscaping, operating a nursery and providing the floral decorations for college functions.

At Kew he rotated among a variety of departments and, in 1970, worked a summer at the Jardin des Plantes in Paris and at a subsidiary arboretum near Versailles. He also has visited other famous gardens in England, Europe and Japan.

As a college student he worked one summer each with the Milwaukee County Parks Department, Longwood Gardens in Kennett Square, Pa., and the Wisconsin Governor's Mansion. As a youngster he helped his father with his hobby of showing hybrid gladiolus.

His parents, still Cooksville residents, are both UW-Madison graduates, he said. His father, Miles, ran the Cooksville general store after World War II until finding a teaching job. Now a potter, Miles was a teacher and administrator in the Evansville schools before retiring. Armstrong's mother, Beth, is a homemaker and retired teacher.

Armstrong's affiliations include the Kew Guild, Scottish Rock Garden Club, Massachusetts and American horticulture societies, American Association of Botanical Gardens and Arboreta, and the board of trustees of Child's Park Foundation, Northampton, Mass.

Armstrong and his wife, Elizabeth, have two children.

###

--Joseph H. Sayrs (608) 262-8290

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 6/27/83

CONTACT: Orrin Rongstad (608) 263-6271

ARBORETUM DEER PROBLEM COMING UNDER CONTROL

MADISON--Last year at this time, between 60-100 white-tailed deer foraged through the University of Wisconsin-Madison Arboretum, devouring hundreds of pounds of bark, leaves and plants each week. The deer posed a constant threat to botanical experiments under way in the 1,260-acre outdoor research facility.

Repeated attempts to trap and tranquilize the herd failed, and plans for a mass deer kill in the arboretum were abandoned after vociferous public protests.

Today, however, the area deer population has been nearly eliminated. Thanks primarily to a successful program of baiting and shooting, only about seven adult deer roam the arboretum, said Orrin Rongstad, wildlife ecologist in charge of the preserve's deer control program.

Rongstad hopes to see the remaining deer removed this fall or winter, either through shooting or through trapping and tranquilizing techniques effectively used by the Arboretum staff in the last year.

If the number of deer could be kept to five or six, the Arboretum could probably sustain them without suffering irreparable damage, said Rongstad. But deer reproduce rapidly, and the costs of keeping the herd size down would be expensive, he said.

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Add one--deer kills

A $7,000 study funded by the UW-Madison Graduate School last year demonstrated just how expensive deer removal is, said Rongstad. He is currently preparing a report on the cost of several techniques used.

Of the methods tried last year, "shooting over bait," in which riflemen brought down deer at night in three designated areas baited with corn, was by far the cheapest and most effective, said Rongstad. "That's the part the public doesn't like, but financially, that's the best solution," he said.

Other techniques employed involved capturing the animals live, crating and shipping them to other locations for release. Techniques included:

--Tracking deer and shooting them with tranquilizer darts;

--Trapping them in baited, steel-and-net boxes with spring-loaded doors;

--Trapping them with rocket nets--40-by-60-foot nets with rockets attached, fired over the animals as they fed on corn bait; and

--Trapping them with drive nets--flushing them into nets.

Rongstad has calculated the man-hours per deer removed with the various methods tried last year. Baiting and shooting a deer required 13.5 man-hours compared to 20.5 for tranquilizing,79 for using drive nets, and 44 for trapping. Arboretum workers and volunteers spent 51 man-hours trying to catch a deer with the rocket nets, but came up empty-handed, noted Rongstad.

After tallying the costs of labor, equipment and transportation, Rongstad found that baiting and shooting cost $70.80 per deer removed, while live trapping attempts cost $347 per animal.

###

--Roger McBain

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 9/8/83

CONTACT: Bill Jordan (608) 262-7888

MEN WHO MADE UW-MADISON ARBORETUM TO RETURN

MADISON--Nearly 100 veterans of old Camp Madison, the CCC camp that operated out of the University of Wisconsin Arboretum from 1935-41, will return Sept. 17-18 for a weekend of tribute and reminiscences.

While more than 1,000 men lived and worked in the camp during the last half-dozen years of the Great Depression, this will be their first get-together since the camp closed in November 1941, just weeks before the attack on Pearl Harbor.

Since then, the alumni of Camp Madison have weathered three wars and have scattered all over the country.

"They are being invited back to see the results of their work -- and so we can say 'thank you,'" according to Gene Glover, coordinator for the Friends of the Arboretum, sponsor of the event.

Arboretum Director Greg Armstrong stressed the important role of the CCC in the early development of the Arboretum. "Most of the initial planting and construction was done by the men of the CCC, and this unique Arboretum may never have been created if it had not been for their efforts," he said. "We owe these men our gratitude for the part they played in the development of this remarkable institution."

A highlight of the two-day event will be an address by former Wisconsin Sen. Gaylord Nelson, current president of the Wilderness Society. Nelson will address the CCC alumni, their wives and representatives of the Arboretum and

-more-

the Friends at a banquet at the McKay Center Saturday evening, Sept. 17.

Other events will include tours conducted by Arboretum guides, slide programs, exhibits of CCC-era photographs and memorabilia, and dedication of a plaque commemorating the men of Camp Madison. Arboretum volunteers will tape record reminiscences for the university's Oral History Archives, and will collect memorabilia for an exhibit.

While many of the CCC veterans who will attend still live in Wisconsin, some are coming from as far away as Kansas, California and Washington.

A national reunion to celebrate the 50th anniversary of the CCC will be held at Eagle River, Wis., from Sept. 20-23.

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BACKGROUND INFORMATION

Arboretum

FFI: Contact Bill Jordan, UW-Madison Arboretum, (608) 262-7888

THE ARBORETUM AND THE CCC

Camp Madison, headquarters for the 2670th Company of the Civilian Conservation Corps from 1935-1941 was a critical factor in the complex of events and circumstances, many of them related to the Great Depression, that made creation of the UW-Madison Arboretum possible in those economically and environmentally troubled times.

Clearly, acquisition of the land for the Arboretum was made possible by low prices characteristic of the period. And the unprecedented plan for developing the Arboretum as a collection of restored examples of the forests and prairies native to Wisconsin was inspired by the grim specter of dusted out land to the south and cut-over and burned forests to the north. But the means of carrying out this ambitious plan was provided by the CCC.

Nowhere, before or since, have conditions made such a venture possible on such a scale, and as a result, the Arboretum remains unique -- the oldest and still the largest and most extensive collection of restored land and animal communities anywhere.

It took just over six years of intensive activity by the "boys" of Camp Madison to make the beginnings of an arboretum appear out of the patchwork of derelict farms that had occupied the site for nearly a century.

The first contingent of CCC workers arrived on the site in August 1935. They took up residence in a complex of buildings that had been built the year before by workers at a transient camp, part of another Depression era work relief program. More buildings were soon added, and at its height Camp Madison

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included ten barracks, a motor pool, machine shop and outbuildings, an army headquarters building, and even a radio shack from which army staff communicated with other army units by wireless. While the army administered the camp, the National Park Service was responsible for the men and the work, and the NPS staff worked out of Charles Nelson's old farmhouse that still stood on the site, not far from the present site of the McKay Center. Nelson's barn served as a mess hall and recreation center until it was destroyed by fire in 1937.

The men who worked at the camp were mostly young men looking for a way through the Depression. During most of Camp Madison's six-plus years of operation there were upwards of 200 of them, mostly young, non-specialist "enrollees," who did manual labor, but there were also some older men with special skills who supervised tasks such as stonework or prairie restoration. Base pay for an enrollee was $30 per month, $25 of which was automatically sent home to the man's family.

At the height of its operation, Camp Madison was like a small village isolated just beyond the outskirts of the city. It had its own mechanics, steamfitters, a circuit-riding minister and dentist, and its own water tower.

It was the only CCC camp in the United States on a university campus, a noteworthy distinction since the work at Camp Madison was different in purpose, if not so different in nature, from the work of CCC camps elsewhere.

While the distinctive work of the CCC everywhere was the revegetation and protection of scarred land, the work at Camp Madison went beyond mere tree or grass planting and aimed at the wholesale recreation of whole ecological communities, intended to represent the plant and animal communities that are native to Wisconsin and the upper midwest, but that had been all but obliterated by the plow, the ax and the dragline by the 1930s.

This attempt at land healing, using nature as a model in the fullest and most complete sense was unprecedented at the time. It made the Arboretum a

pioneering experiment and proving ground for a new kind of environmental technology dedicated to the restoration or healing of degraded land.

But if this was a bold experiment, shaped in the minds of imaginative, environmentally sensitive UW professors such as Aldo Leopold, William Longenecker, Norman Fassett and John Curtis, it was an experiment that was carried out in large measure by the men of the CCC.

Camp Madison closed in November of 1941. Many of the members of the 2670th company went off to fight a war. They left behind the beginnings of an arboretum. The work they did had been valued at well over $1 million; the results remain to enrich both Madison and the worldwide community of scholars, naturalist, and scientists who profit from it.

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GENERAL BACKGROUND ON THE CCC

The Civilian Conservation Corps was one of the first programs of the New Deal, and was signed into law at the end of March 1933, just weeks after the Roosevelt administration took office.

Altogether, it employed nearly 3 million men, who worked out of more than 2,600 camps across the country -- 76 of them in Wisconsin, where the major task was reforestation of land cut over by loggers during the previous century.

The Corps was one of the most successful and popular of The New Deal programs. A 1936 Gallup poll found that 82 percent of the country favored continuing the CCC. The corps was known affectionately at "Roosevelt's Tree Army": during its decade of existence its members planted 1.3 billion trees.

An alumni organization, the National Association of CCC Alumni, has been formed and has headquarters in Rhinelander. The NACCCA is holding a national reunion at Eagle River from September 20-23. The contact person there is Roland Applin, Route 6, Box 1734B, Rhinelander WI 54501.

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feature story

Arboretum

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: (608) 262-3571

Release: Immediately 3/22/83 dls

CONTACT: William R. Jordan (608) 263-7888

CCC WORK IN ARBORETUM REMEMBERED; REUNION SLATED

MADISON--The University of Wisconsin-Madison Arboretum, a 1,260-acre preserve of native plant communities, would not exist in its present form--and perhaps not at all--except for the efforts of hundreds of Civilian Conservation Corps (CCC) workers during the Depression.

Among a collection of 28 historic photographs now on display at the Arboretum's McKay Center, many show the period when conservation corps crews worked out of a camp on the site. These crews, according to Arboretum officials, did most of the work that turned an area of derelict farms into a unique collection of plant and animal communities.

The exhibit includes views of the Arboretum area before its development, the efforts that went into its creation, and several of the people directly involved. Assembled in connection with the Arboretum's 50th anniversary last year, it is part of an effort to remind the public that the Arboretum is not a natural area, but the result of intensive and continuing work.

A reunion to recognize CCC contributions has been set for mid-September at the Arboretum. Organizers say interest seems to be increasing as the 50th anniversary of the CCC's formation approaches.

It was on March 31, 1933, that President Franklin D. Roosevelt signed legislation creating the CCC, an arm of the National Park Service that provided employment for thousands of young people during the Depression.

- more -

Gene Glover, of the Friends of the Arboretum, said about 40 of 60 former CCC employees contacted so far are planning to attend the two-day reunion. Additional responses are rolling in almost daily as notice of the get-together spreads, mostly by word-of-mouth, she said.

A gathering of former employees for the entire organization is scheduled at Eagle River a week after the Madison reunion.

The Madison gathering recognizes those workers who, in little more than six years, essentially "made the Arboretum," according to William R. Jordan, coordinator of the McKay Center.

"People who come out here for the first time see our woods and our prairies and often assume that these grew here naturally," Jordan said. "In fact, many of our best communities weren't here at all in 1932 and have been created, one plant at a time, almost like a garden.

"This is really what is unique about the Arboretum. It was the first time anyone anywhere had undertaken a project like this in a deliberate attempt to restore plant and animal communities that had been destroyed by the plow and the axe."

Today the Arboretum's collection of restored ecological communities includes maple forests, pine and spruce forests, and two of the oldest restored tall grass prairies in the world, Jordan said. Other communities include oak forest and wetlands that already were on the site.

Altogether, the Arboretum makes it possible for UW-Madison students, researchers and visitors to visit all the major communities native to Wisconsin and the upper Midwest within a 30-minute hike of a parking lot, Jordan said.

Ironically, the labor of CCC workers and the availability of cheap land combined to make the Depression era the time of the Arboretum's greatest growth and improvement.

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"The CCC made it possible for the plans of the university people to be executed," Jordan said. "It couldn't have been done at any other time."

The first men arrived in August 1935 and the Arboretum camp functioned until late November 1941. The workers, mostly from surrounding counties, did stonework, grading, dredging, roadwork, and created Curtis Prairie, perhaps the best known of the preserve's plant communities.

The photo exhibit is sponsored by the Friends of the Arboretum and was designed by Barbara Jordan. The McKay Center is open from 9 a.m.-4 p.m. weekdays and 12:30-4 p.m. weekends.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 2/5/82 jhs

ARBORETUM DEER SHOOT POSTPONED FOR CHANCELLOR'S REVIEW

MADISON--Plans for a Feb. 13-14 deer shoot to reduce grazing damage in the University of Wisconsin-Madison Arboretum were ordered postponed Friday until the chancellor's office has time to review the safety and effectiveness of the proposal, a chancellor's aide said.

"We want to make absolutely sure that the public safety will be preserved," said Arthur O. Hove, an assistant to Chancellor Irving Shain. The University's Arboretum Committee was asked Friday morning to postpone the shoot.

Hove said the chancellor also wanted to study whether a deer shoot was the best way to cull the estimated 60 to 100 deer that reside in the Arboretum on Madison's south side.

There was no estimate of how long the review process would take.

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(NOTE TO EDITORS AND NEWS DIRECTORS: PLEASE REFER TO STORY SENT EARLIER FRIDAY FOR DETAILS ON THE PLANNED DEER SHOOT.)

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Arboretum

Release: Immediately 2/5/82 dls

CONTACT: Bill Jordan (608) 263-7888

ARBORETUM TO CLOSE FOR DEER SHOOT

MADISON--University of Wisconsin-Madison's Arboretum, a preserve of restored native Wisconsin plant communities, will be closed to the public Feb. 13 and 14 in order to conduct an intensive deer shoot, officials announced Friday.

Public entrances to the Arboretum will be patrolled during the weekend shoot. Only roads leading to adjacent private residences will remain open.

Wildlife ecology professor Orrin J. Rongstad, chairman of the Arboretum management subcommittee, said the shoot is necessary because deer in the preserve are damaging the plant communities. A horticultural area near the McKay Center has sustained "thousands of dollars" in damage, he said.

The two-day hunt is an extension of a policy started in the 1970s to control the deer population. Over the years, about 95 deer have been shot but the population continues to increase, Rongstad said.

An effort in the last two months to tranquilize and relocate deer was "completely inefficient," said Rongstad. More than 40 man-days netted only two animals.

The deer will be shot by 15 law enforcement volunteers from Madison, Dane County and the University. Rongstad said it was hoped the entire deer population, estimated between 60 and 100, could be eliminated, but added, "If we can shoot half, we'll be lucky."

- more -

Add one--deer shoot

The committee decided not to allow unauthorized hunters into the preserve for safety reasons. The Arboretum is almost entirely surrounded by houses and roads.

The main function of the Arboretum, Rongstad emphasized, is to restore and maintain in one area the main ecological communities native to the state.

"If the plant communities are destroyed, a lot of the value is gone," he said. "The public should realize you have an Arboretum without deer or not at all."

Uncontrolled, the deer population might go as high as 300 within the Arboretum's boundaries, Rongstad said. Such a situation could result in widespread defoliation, and the eventual death of many deer by starvation.

While deer were part of the native Wisconsin environment, their natural predators -- wolves and mountain lions -- are no longer present. So far, efforts by the University to act essentially as a substitute predator have not stabilized the deer population.

The carcasses will be sent to the Wisconsin Department of Natural Resources, where it is expected they will be prepared for sale, Rongstad said.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately

12/18/85

CAMPUS OFFERS CURES FOR CABIN FEVER

By INGA BRYNILDSON
University News Service

MADISON--It's holiday break. The kids are home from school. They've built a brigade of snowmen and practically cleared the lawn of snow by making snow-angels. Now come the words every parent dreads: "I don't have anything to do."

Instead of the usual offerings, you could take them to see a banana tree -- with real bananas -- or a 10-foot-tall mastodon skeleton. Or take them to hear Christmas carols performed in a bell tower, or to gaze at the stars through an observatory telescope. All these things are as near as the University of Wisconsin-Madison campus. Best of all, they're free.

Here's a roster of holiday offerings at UW-Madison (times listed may vary over the holidays, so it's best in some cases to call ahead):

-- The Bells of Christmas Are Ringing: The last bell concert of the year at the Carillon Tower will celebrate the music of Christmas and Hanukkah. John Harvey, UW-Madison emeritus professor of music and official university carillonneur, will begin ringing the bells at 3 p.m. Sunday, Dec. 22.

According to Harvey, as many as 50 people can fit inside the heated keyboard room of the tower. "It usually turns into a sing-along," he said. Children and adults alike are welcome to climb up to see the bells. "Or you can sit in your car outside and listen," said Harvey. The Carillon Tower is located across from Bascom Hall on Observatory Drive.

-- Star of Wonder, Star of Light: The Washburn Observatory on campus is open to the public the first and third Wednesdays of each month. From November through April, observatory shows begin at 7:30 p.m., although they are canceled if skies are cloudy.

The observatory, overlooking Lake Mendota on Observatory Drive, features a 15-inch refracting telescope. Observatory officials caution that Halley's comet viewing is not on the agenda due to interference from city lights.

-more-

Add 1--Campus cures

-- The Cattle Are Lowing: Many city kids never visit a dairy farm -- even in America's Dairyland. The university's 100-cow herd is milked twice daily and visitors are always welcome. Milking is at 3 a.m. and 1:30 p.m. in the Dairy Cattle Center, 1815 Linden Drive. The observation deck is located next to the milking parlor in the middle of the building on the north side.

-- Visions of Sugarplums: Well, not quite. But you can watch the university's famous ice cream being made, along with yogurt, cheese and butter. The dairy plant in Babcock Hall at Babcock and Linden Drives is open weekdays from 8 a.m.-2 p.m.

To reach the glass observation deck, use the main entrance on the building's east end. Climb the stairs to the second floor and walk to the end of the hall. Dairy products, including UW-Madison's famous ice cream, are also for sale at a counter in the building.

-- Walking in a Winter Wonderland: The UW Arboretum is a favorite oasis in the city in all seasons. Miles of hiking and ski trails lace the Arboretum's 1,280 acres. The Arboretum is open to the public daily from 7 a.m.-10 p.m.

-- Jingle Bell Rock: The Geology Museum in Weeks Hall at Charter and Dayton streets is open weekdays from 8:30 a.m.-4:30 p.m., and Saturdays 9 a.m.-noon. In addition to a mastodon skeleton, the museum has fossils, minerals, crystals and more from around the world, as well as moon rock replicas. (608) 262-2399.

-- Deck the Halls with Boughs of Holly: And cacti and orchids and banana trees. The UW-Madison Botanical Greenhouse in Birge Hall is open weekdays for tours by older children and adults. Come in out of the snow and see lilly pads in bloom on a small pond. For tours, call (608) 262-2235. The greenhouse will be closed the week between Christmas and New Year's.

-- To See if Reindeer Really Know How to Fly: You can find out the truth of this and other animal mysteries with a trip to the university Zoological Museum in Noland Hall. The museum is open for small group tours weekdays 9 a.m.-4 p.m. Phone (608) 262-3766.

In addition, an exhibit on endangered species is open without appointment in Room 123 of Noland Hall, on the west corner of Johnson and Mills Streets. The exhibit features pelts and now-illegal products made from endangered species including wolf, eagle, sea turtle, leopard and others.

-- You'll Go Down in History: You won't find Rudolf the Red-Nosed Reindeer at the State Historical Society Museum, but you will find other notable characters. The museum, located at the west end of the State Street Mall, is open 9 a.m.-5 p.m. weekdays and Saturdays, and noon-5 p.m. Sundays (when the university isn't in session).

The special exhibit through Feb. 2 is "Six Generations Here: A Family Remembers," featuring photographs and artifacts from the Krueger Family of Watertown. Permanent exhibits on Wisconsin's history -- including antique dolls -- are also open for tour. The museum's gift shop has a unique collection of crafts and gifts from Wisconsin.

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-- Inga Brynildson (608) 262-3846