

Ring width patterns of a chestnut oak (*Quercus montana*) from Lilley Cornett Woods, KY:

An example of accelerated growth in old trees across the eastern US
*A brief overview of a sample for the paleoclimate exhibit of the
American Museum of Natural History*

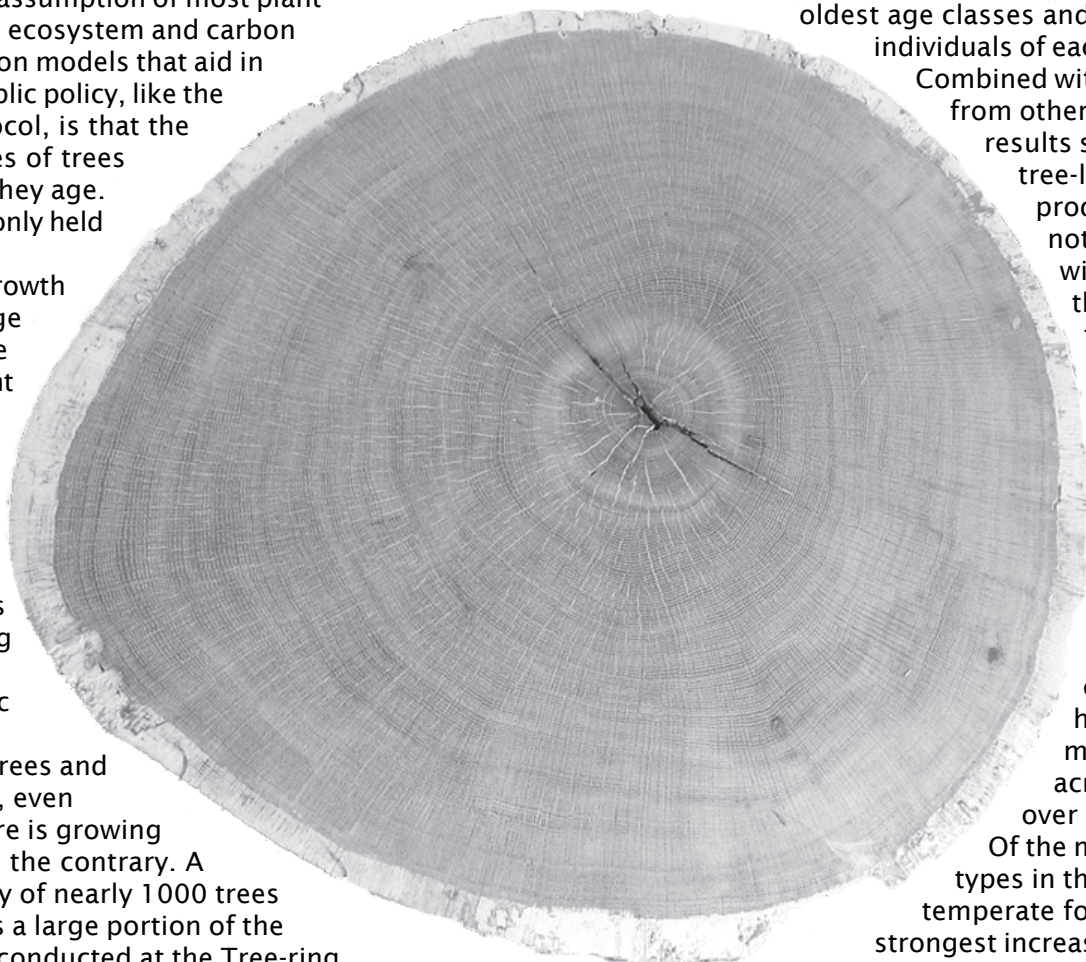
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A common assumption of most plant physiology, ecosystem and carbon sequestration models that aid in forming public policy, like the Kyoto Protocol, is that the growth rates of trees decline as they age. This commonly held concept of declining growth with tree age has become an important component of management plans and the basis of expectations that soaking up of atmospheric carbon will decline as trees and forest ages, even though there is growing evidence to the contrary. A recent study of nearly 1000 trees from across a large portion of the eastern US conducted at the Tree-ring Laboratory of Lamont-Doherty Earth Observatory and Columbia University appears to contradict this long-held notion. The trees in this study include a total of 981 mixed-aged trees and are comprised of white oak (*Quercus alba*), chestnut oak (*Q. montana*) and tulip-poplar (*Liriodendron tulipifera*) trees growing in natural forests. Old trees are an important part of this collection: more than 160 of these trees are older

than 300 years and the collection includes the oldest white oak (464 years) and chestnut oak (427 years) on record.

Analysis of this data set found growth rates increased over the last 150 years, even in trees of the oldest age classes and the oldest individuals of each species.

Combined with evidence from other studies, these results suggest that tree-level productivity does not always decline with age. Because they contradict the long-held tenet that growth rates decline as trees age, these results suggest that old-growth forests could be active carbon sinks, a concept that has gathered more evidence across the globe over the last decade. Of the many forest types in the world, temperate forests have the strongest increase in living



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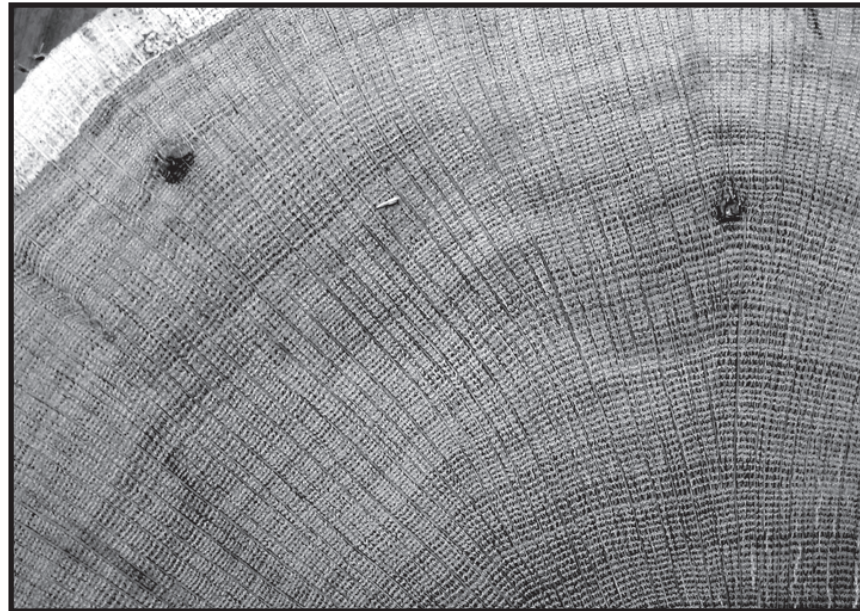
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biomass and total ecosystem carbon as they age. The data from the Lamont-Doherty study supports these findings and shows that old trees can be a vital element of the world's carbon cycle. Put another way: the accelerated growth of these ancient trees over the last 150 years is much like your grandparents all of a sudden being able to dunk a basketball when they are 50 years old and being able to continually dunk until they are well into their 70s.

A photo of a cross-section from a recently killed chestnut oak from Lilley Cornett Woods, a premier old-growth forest owned by Eastern Kentucky University in the southern Cumberland Plateau of southeastern Kentucky, appears on page 1. This sample symbolically represents the patterns of growth seen in nearly 1000 trees from across the eastern United States described above. It was cut from a downed tree at approximately eight meters (25 feet) above the ground. The sample has growth rings from 1758 until spring 2005. We can tell when this tree died by the presence of only pore-vessels in 2005; there is no wood formed on the outside of the cross-section. Pore-vessels are produced in oaks before their leaves are extended in early-spring. Wood fiber is often produced during late-spring to early-summer each year. So, because of



the lack of wood and the presence of only pore-vessels, we can conclude that this tree died sometime in spring 2005.

Although it is not apparent from the actual sample or a

graph of its average ring width through time (Figure a, page 3), this tree experienced accelerated growth over the 150 years prior to its death, though a short decline in growth is apparent over its last three years. When looking at the patterns of its raw ring widths, a few interesting patterns are apparent: 1) ring width initially declines until it hits lowest point over the last 247 years, a width of 0.079 mm in 1822; 2) ring width starts to increase until it suddenly jumps between 1839 and 1842; 3) ring widths stay generally above the long-term average after that period, including an increase just prior to 2001; and 4) ring widths begin to decline in 2001. The sudden increase in ring width in the late-1830s is most likely related to the death of trees surrounding this individual. In general, when neighboring trees die, the amount of sunshine, moisture, nutrients and, generally, space to grow increases. As a result, small trees under the canopy respond to the increase in sunlight, water, nutrients and space with a sudden spurt of growth for about 10-20 years.

Anyhow, it is estimated that this tree was 15 centimeters (6 inches) in diameter in 1840 at eight meters above the ground. Roughly 20 years after being released from competition of canopy trees, this tree was now about 21 centimeters (8.5 inches) in diameter, essentially a 40% increase in just 20 years.

The reason it is difficult to see the accelerated growth rate of this tree from the

sample or raw ring width figure is due to geometric constraints of tree growth. When trees grow, their stem diameter increases. If a tree grows at a constant rate, ring widths decline because the tree's trunk is expanding. Therefore, to better visualize total tree growth, raw ring widths can be converted using growth equations for trees. For more than a century foresters have known that the diameter of a tree at roughly 1.4 meters (4.5 feet) above the ground can give a good estimate of how much wood is in a tree above ground. Tree rings can be used in this relationship to get a better estimate of tree growth through time. The second figure (Figure b) associated with this tree sample exemplifies this relationship by removing the geometric constraints of stem growth to reveal how fast this tree was growing each year since 1759.

You can see that when the tree was small, before the death of its neighboring trees in the late-1830s, its growth rate was constant and somewhat slow. Following the death of its neighbors, tree growth suddenly increased and continued to increase each year. In 1900, when this tree was 150 years old at eight meters above the ground, growth of this tree continued to accelerate even though it was more than one-third of the maximum known age for this species! When growing conditions around this tree improved in the late-1940s, annual growth rates increased again for another decade!! After a brief decline in the 1960s, *annual* growth rates accelerated again, reaching their highest rates when the tree was well more than one-half maximum known age for chestnut oak!! There is a decline in growth rates just prior to the death of this tree. However, in the larger data set, many of the older trees, including the oldest-known white and chestnut oaks have their highest rates of annual growth at the oldest-known ages!!!

If you could look at this sample under a microscope, you could see some interesting rings that point to other events in the life of this tree. For example, soon after the tree reaches nine meters in 1758, there is a sudden decline in ring widths. This begins in 1774. Inspection of the 1774 ring shows a ring with pore-vessels and only a sliver of wood. Oaks almost always *HAVE* to form their pore-vessels before leaf-out. Without these pore-vessels, oaks will have a hard time bringing water from their roots to their young leaves when they are formed in the canopy. What is startling about the 1774 ring is that something severe happened to this tree, and likely most trees at Lilley Cornett Woods, in the spring and, perhaps, throughout the growing season. Why do we say that? We say that because of the lack of wood formation in 1774. It is hard to say what happened. We can say that this tree hardly grew in 1774. Interestingly, we have seen 1774 as a very small ring in many tulip-poplars from the Smoky Mountains to central Virginia, which suggests

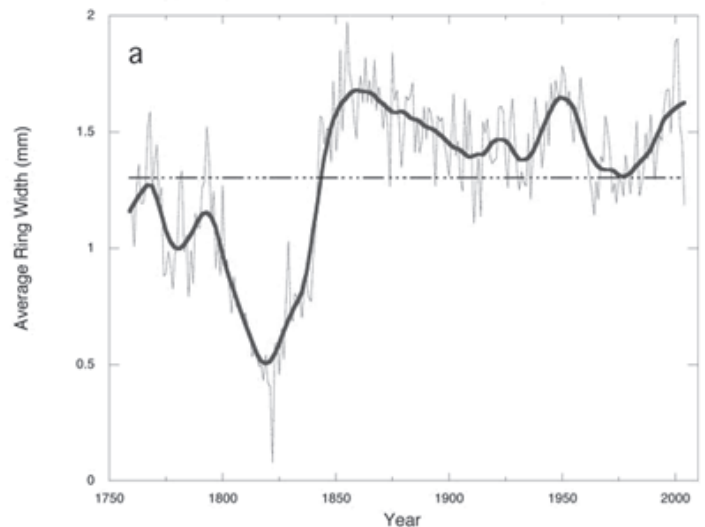
that the cause of this narrow ring might have been a regional climatic event.

Also, on this cross-section we can see some scars embedded in the rings that represent other historical events in this tree. The scars occurred in 1910 and 1968 (see photo on page 2). In this case, you can see a scar that was grown over in subsequent years. It is hard to say what exactly happened to this tree. Among the possibilities are fire or a falling neighbor that scraped this tree as it fell over.

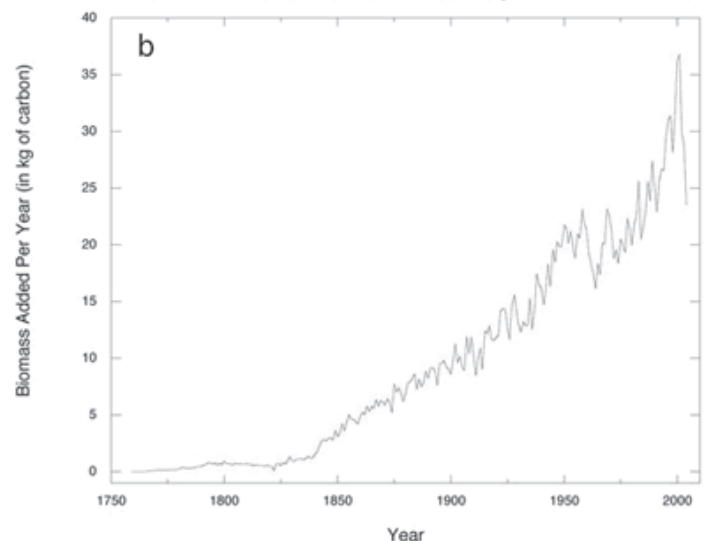
Scientists use patterns of wide and narrow rings and the presence of scars to reconstruct the history of forests and climate. Not only are trees one of our best friends because of their ability to provide oxygen, sugar, shade, homes and food to some of our favorite creatures as well as beauty for our senses, they are one of our best friends because their rings record the happenings of the world and hold onto these stories for centuries until people study these stories embedded in their rings.



Average Ring Width from Chestnut Oak, Lilley Cornett Woods



Annual Biomass of a Chestnut Oak, Lilley Cornett Woods, KY



Native Plant Society News

KNPS Board and Officers: New nominations

President: Alan Nations, *new*

VP: Pat Haragan, *continuing*

Treasurer: Amy McIntosh, *new*

Secretary: Amanda McKinney, *continuing*

Directors: Brian Gasdorf (*new*), Sarah Hall (*new*), Steve Sensenig (*new*), Zeb Weese (*continuing*).

See bios of many of the new leaders below. Other board members will be highlighted in future issues. The KNPS membership will have an opportunity to nominate additional individuals from the floor at the annual fall meeting. The membership will then vote in a slate of officers and board members (see page 11 for meeting details).

Alan Nations is employed with the Blackacre Conservancy at the Blackacre Nature Preserve in Louisville. He manages various projects on the preserve and historical home place, using his skills as a land manager, Certified Arborist, Interpretive guide, and master trail builder. With a lifelong passion for nature and the outdoors, Alan had a previous career in the US Coast Guard, where he worked in enforcement of federal laws protecting fish, endangered species, water quality, and boating safety. Alan's hobbies are botany and backpacking. He and his wife Elaine are recent empty nesters and live in Fairdale, where they spend a lot of time working in the fields and forest around their home.

Amy McIntosh is a graduate student at EKU, working with Dr. Ron Jones on the vascular flora of additions to the Kentenia State Forest on Pine Mountain. Prior to studying botany, Amy received bachelors degrees in drawing and art history from U of L and a masters degree in printmaking from Miami University. Over 50 of her pen and ink drawings have been published in Dr. Jones' *Plant Life of Kentucky* (2005). She has also led botanical drawing workshops for KNPS and is offering a certification class in the fall. Amy serves as the graphic designer for *The Lady-Slipper* and has contributed articles on botanical art, Ellwood Carr and Aristolochiaceae.

Brian Gasdorf has been Park Naturalist at Natural Bridge since February 2007. Brian has been responsible for much of the coordination and publicity of the last two KNPS Spring Wildflower Weekends, and has done a wonderful job! He previously worked as a seasonal naturalist at Natural Bridge State Park which led him to jobs at Salato Wildlife Education Center, John James Audubon State Park and Touchstone Energy. He enjoys many outdoor activities including backpacking, hiking, and canoeing.

Sarah L. Hall began working with Kentucky State University in 2007, as a co-Investigator for the Beetle Biodiversity Project. Sarah is a Kentucky native (Madison County) and serves as the project's plant ecologist. Her specific focus is quantifying biodiversity of vegetation in

Membership Survey Results

1. The reason you belong to KNPS (lower number reflects highest importance):
 Newsletter- 82
 Field Trips - 93
 Classes or educational opportunities - 109
 School or research grants - 134
2. Many of you are willing to volunteer to help, with most interested in field trips, the newsletter and classes, and a couple interested in assisting with grants.
3. Newsletter mailing preferences:
 28 respondents prefer an electronic format
 26 prefer a hard copy
4. Newsletter format:
 40 respondents prefer the current format
 4 respondents would like to see articles reduced
 11 respondents would like an expanded journal-type research format at least once a year.
5. KNPS activities were ranked according to importance (with lower numbers indicating the highest significance):
 Field trips to specific habitats or areas - 163
 Set up certification program in native plant studies across the state - 186
 Organize plant rescues and other conservation activities - 198
 Work with other conservation groups with projects - 203
 Field trips to see rare plants - 217
 Sponsor conferences dealing with native plant issues - 221
 Establish rare plant gardens or seed banks - 234
 Field trips to collect scientific data - 237
 Fund student research and establishment of native plant gardens at schools - 239
 Sponsor periodic lectures around the state - 250

Many additional helpful comments were made by respondents. We are excited to use the information gleaned from this survey to insure that KNPS continues to provide quality activities and information to the membership and reach members throughout the entire state. Thank you for your participation!

grassland systems, as well as its response to various management techniques (prescribed burning, mowing, grazing, etc.) She received a bachelors in Environmental Education from Appalachian State University (Boone, NC) and a masters in Forest Restoration Ecology from University of Kentucky (Lexington). She is pursuing a PhD in Grassland Ecology at the University of Kentucky.



KNPS Native Plant Certification Courses Eastern Kentucky University Fall 2008

CORE COURSE:

Kentucky Wildflowers

Instructor: Dr. Ronald Jones, Foundation Professor of Biological Sciences, EKU.

A course designed for those with some background in the variety of wildflowers and their associated terminology. We will meet in the lodge at Maywoods Environmental and Educational Laboratory in Garrard County, 30 minutes south of Richmond. The course will involve instruction in how to use the sets of keys in *Plant Life of Kentucky*, and conservation issues related to native plants will be discussed. Directions available at: <http://www.naturalareas.eku.edu/maywoodsdirections.php>

Tuition: \$73

Site: Maywoods

Saturdays: August 9, September 6
9 am to 4 pm

SPECIAL TOPICS COURSES:

Botanical Drawing

Instructor: Amy V. McIntosh (M.F.A., Miami University; M.S. Candidate in botany, EKU)

Students will learn how to select and handle a botanical subject, sketch and select from potential compositions, and accurately render pleasing plant portraits. Composition, scale, proportion, perspective, line, value and scientific accuracy will be emphasized. This course provides not only instruction in drawing but also a review of plant morphology for both beginning and advanced plant enthusiasts. A brief review of botanic art will be given during the first session, with each meeting including drawing activities. Two outside-of-class assignments will be given. All materials will be provided for in and out of class work (a materials fee of \$15 will be collected during the first class). All experience levels welcome.

Tuition: \$53

Site: EKU's Perkins Bldg.

Thursdays Sept 4,11,18 · 6-9pm

Field Geology for Amateur Naturalists

(Note—this course will count for 2 of the 6 required credits from the Special Topics category)

Instructor: Mark Sweet, Geologist, Shield Environmental Associates Inc., Lexington, KY.

The objective of this course is to familiarize the student with basic concepts of geology and geology of Central and Southern Kentucky. The course will be very "hands-on" and will consist of two Tuesday night classes, and two Saturday field trips. The goals of the Tuesday night sessions are to familiarize students with basic geologic concepts such as geologic time, uniformitarianism,

facies changes, types of rocks, dynamic forces within the earth's crust, the "geologic column" relative to Kentucky, map reading and orientation, and an overview of stratigraphic sections visited during the class. The two fieldtrips will involve car-pooling to: 1) various sites from Fayette to Pulaski County, and 2) the Natural Bridge/Red River Gorge area. Depending on the wishes of the class, a trip to Southern Kentucky may be substituted for the Natural Bridge/Red River Gorge field trip. Efforts will be made to adjust field trip times to meet the schedules of participants. Students should be aware that number of hours noted are estimated minimum time needed, and it may be advisable, especially if the class is willing, to extend some of these trips. This is an ideal class for anyone that has always desired to understand more about Kentucky geology and the history of the earth, and how it can be interpreted from the geologic record, but has little or no background in geology. A \$15 material fee is payable to the instructor at the beginning of class for maps and handouts.

Tuition: \$59

Site: Tuesday meetings take place at EKU's Perkins Bldg.

T · Oct 7 · 6:30 - 8:30 pm

S · Oct 11 · 9:00 am - 12:00 pm (Central KY Field Trip)

T · Oct 14 · 6:30 - 7:30 pm

S · Oct 18 · 9:00 am - 2:00 pm

(Eastern KY Field Trip to either Red River Gorge or Southern KY area)

Identifying Poisonous and Edible Plants

Instructor: Dr. Ronald Jones, Foundation Professor of Biological Sciences, EKU.

This one-day workshop is designed for anyone, regardless of background, with an interest in becoming more familiar with native and nonnative plants that might be useful for foods or medicines, and also in becoming familiar with plants to avoid. Participants will learn what key features to observe that help to identify whole groups of plants as poisonous or edible. General techniques of making correct identifications will also be emphasized, and the helpful books and websites will be discussed. Participants will view a PowerPoint presentation and discussion in the morning, and then visit nearby sites to identify plants in the afternoon.

Tuition: \$24

Site: Gladie Cabin Visitor Center, Red River Gorge
Saturday Oct 25, 2008 · 9 am to 4 pm.

Basic information

To register call EKU Community Education at (859)622-1228. For more information contact ron.jones@eku.edu.



President's Message

Summer is upon us and once again I am reminded how global warming is affecting our native plants. Remember the cool, wet spring with delayed wildflower blooming? People were questioning the issue of global warming - perhaps they should take stock of what is in flower now. I could always count on glade coneflower (*Echinacea simulata*) and pale purple coneflower (*E. pallida*) to be at the beginning of their flowering season around June 12. I was leaving on vacation to Texas and needed to get some images for a book project and went to the Baker natural area in western Kentucky to photograph them. Boy was I surprised to find that the coneflowers still had the ray flowers but they were bleached and the individual flowers in the head were already done flowering, a good month early!!! I also found typically later blooming species like *Heliotropium tenellum* already displaying their full glory. It is now only mid-June and the purple coneflowers are already reaching full flower, again at least two weeks early. So as you begin to watch the native species try to imagine what this world will be like in 10, 20, or 30 years. What kind of a world are we leaving to our children and their children?

I had the great fortune once again to provide a program to the folks at the E. Lucy Braun workshop at the Pine Mountain Settlement School and I mentioned the lack of good laws for protecting plants in Kentucky. There was a vigorous discussion about what can be done about this problem. Perhaps we, as supporters of Kentucky native plants, can begin to work on developing some better environmental laws to protect not only our plants, but also wildlife and habitats. If we plant enough seeds of hope, perhaps it can become a reality. Please contact the incoming president with your thoughts about how the society can proceed to work on crafting and promoting this important environmental legislation.

Have you seen the new environmental license plates? Aren't they great?! The funding generated by these goes to protect Kentucky natural areas. Did you know that Kentucky had the fewest "vanity" or special license plates when this program was initiated and now we offer the most of any state in the country? It only takes the promise of sales of 100 plates and a legislator to promote it to get your own new plate like many worthy causes have done including the Louisville Zoo, the KY League of Sportsmen, etc. Unfortunately because of the proliferation of these plates, funding for the purchase of natural areas is declining. So get out and promote the environmental plates (many which include a native flower) to keep this source of funding alive and well because it is essentially the only revenue source for purchasing environmentally sensitive land in this state.

The new book, *Rare Wildflowers of Kentucky* has been released and it provides an introduction to Kentucky's signature rare plants and draws attention to the beauty of Kentucky's old-growth forests, prairies, wetlands, and other habitats while focusing on the state's endangered flora. See page 11 for more information.

While looking for resources about Kentucky native plants do not forget about these other important botanical contributions: *Plant Life of Kentucky: An Illustrated Guide to the Vascular Flora*; *Mushrooms of West Virginia and the Central Appalachians*; *Trees and Shrubs of Kentucky*; *Vascular Plants of Kentucky: An Annotated Checklist*; *Weeds of Kentucky and Adjacent States: A Field Guide*; *Wildflowers and Ferns of Kentucky*; and *Wildflowers of Mammoth Cave National Park*.

The KNPS is in need of instructors to teach our certification courses in Western Kentucky. There are between 30 and 40 folks interested in taking the KNPS Native Plant Certification Program in Paducah, Hopkinsville, and Madisonville but we currently have no one to teach the courses. If you know anyone, or would like to volunteer, contact Landon McKinney (lmckinney@ascgroup.net). This is one of the best programs KNPS has to offer and we need your help. Certification students have the potential to become great KNPS ambassadors which means reaping important benefits for the society in the future.

Finally, we are trying something new this year for our fall meeting--expanding the meeting to make it a two day event (see page 11 for details). Pat Haragan has done an exceptional job putting together a program that we hope will attract our members and others to learn more about Mammoth Cave and how the Kentucky and Tennessee flora are similar yet different. Randy Seymour will speak about the wildflowers of Mammoth Cave on Friday evening and Dwayne Estes from Austin Peay State University will talk about the Kentucky and Tennessee flora on Saturday. I especially want to invite all the folks from Western Kentucky University, faculty, students, staff and anyone in the region to come and attend this great event. If you see Pat tell her thanks for putting together another great fall meeting. For those who meet me on the trails and backroads of Kentucky, please take the time to stop and say hello as I will be working on several new book projects on Kentucky and always welcome good conversation and fellowship while in the field.

~Thomas G. Barnes, Ph.D.



Botanical Timeline for Kentucky

Continued from Issue 23:1
By Ron Jones

Note: some of this information was extracted from www.eqc.ky.gov and from <http://www.huntington.org/Education/TimeLine.html>. Also note that newly described plant species for Kentucky are only listed if they are now state-listed, or if they were described after 1975. A few national or international events of significance to Kentucky botany are also listed. Also note that full citations are not given for journal articles, and for those interested, most of these articles since 1985 are cited in a new publication in the Fall 2007 issue of the *Journal of the Kentucky Academy of Science* (volume 68, pages 145-180), and others are cited in the papers by Fuller, also cited in this 2007 article.

1998—Kentucky tobacco continues to generate over \$800 million a year, as it has for the past decade, but this total will begin to drop, and by 2003 it is down to \$450 million a year.

1998—The Kentucky Forest Conservation Act passed, requiring best management plans to protect water quality. It defined Best Management Practices (BMPs) for logging, created a state BMPs Board of landowners, and established a Master Logger Program that trains loggers in BMPs; also established fines for violators of BMPs.

1998—R. Naczi, Reznicek, and B.A. Ford, describe a new species, *Carex superata*, for Kentucky and the southeastern U.S.

1998—*Illustrated Companion to Gleason and Cronquist's Manual*, by N.H. Holmgren, is published by the New York Botanical Garden.

1998—*Atlas of Kentucky*, editor-in-chief, R. Ulack, published by the University Press of Kentucky. This volume includes extensive information on the natural resources of the state, in relation to historical, economic, agricultural, social, and political factors.

1998—*Trees of the Central Hardwood Forest of North America*, by D.J. Leopold, W.C. McComb, and R.N. Muller, the latter then a professor at UK.

1999—R. Naczi describes a new species, *Carex planispicata*, for Kentucky and the eastern U.S.

1999—Land Between the Lakes is transferred from TVA to the U.S. Forest Service.

2000—*Wildflowers of the Land Between the Lakes Region*, Kentucky and Tennessee, by

E.W. Chester and W.H. Ellis, published by the Center of Field Biology, Austin Peay State University. It includes about 360 photographs. Chester and colleagues have conducted floristic and vegetation studies for over two decades in western Kentucky and Tennessee, chiefly focusing on LBL, barrens, and new species records.

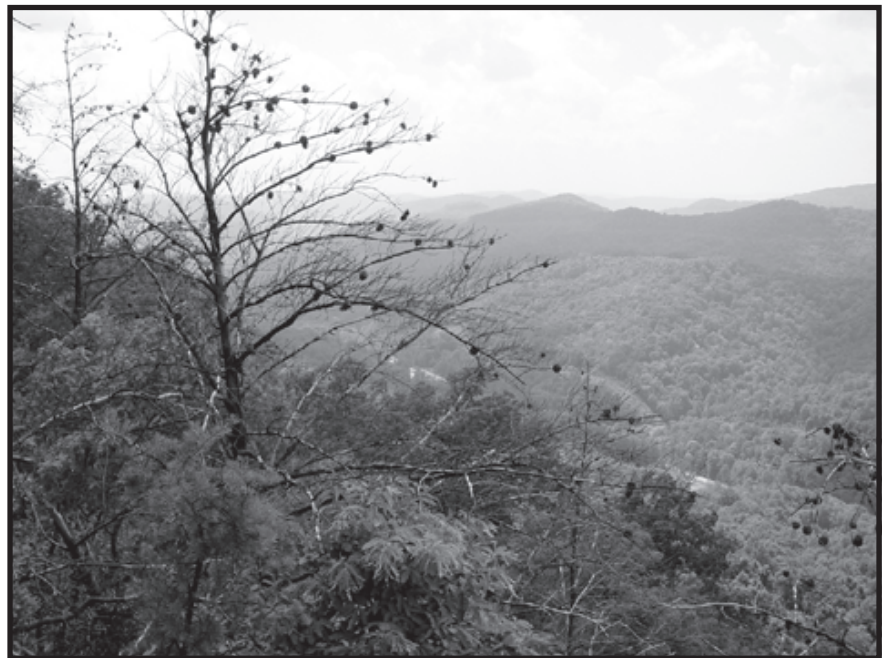
2000—The Commonwealth agrees to purchase timber and mineral rights on Black Mountain to prevent additional destruction of Kentucky's highest point.

2000—Kentucky population reaches 4 million, an increase of 1 million in past 40 years.

2000—R. Brooks and J. Campbell describe a new species for Kentucky, *Elymus macgregorii*.

2000—R. Thompson and coauthors (R. Jones, J. Abbott, and W. Denton) publish a comprehensive botanical survey of Rock Creek Research Natural Area, the only Federal Research Natural Area in the state. Thompson goes on to publish a number of natural area botanical surveys, including studies of Hancock Biological Station, Indian Fort Amphitheater, Clark County limestone quarry, Feltner Lake, Anglin Falls, Berea College Forest reservoirs, Elk and Bison Prairie of LBL, and Berea College Forest.

2000—*Aquatic and Wetland Plants of the Northeastern North America*, by G. E. Crow, and C. Barre Hellquist. Kentucky is included in the coverage of this 2-volume set.



Pine beetle damage on Pine Mountain. Photo: Amy McIntosh



Robert Naczi. Photo: www.ansp.org

2001—*Woody plants of six Northern Kentucky counties*, by R.C. Clark and R.M. Baur. The only recent multi-county woody plant survey in the state.

2001—R. Naczi and B.A. Ford describe another new species, *Carex timida*, for Kentucky and the SE U.S.

2002—*Taxonomy and Ecology of Woody Plants in North American Forests*, by J.S. Fralish, and S.B. Franklin, both having conducted considerable research in Kentucky.

2002—*Land Between the Lakes, Kentucky and Tennessee: Four Decades of Tennessee Valley Authority Stewardship* published; edited by Edward W. Chester and James S. Fralish and summarizing management and research at Land Between the Lakes from 1960s to 2000.

2002—R. Naczi and C. Bryson describe a new species, *Carex kraliana*, for Kentucky and the southeastern U.S. This species was named in honor of Professor Robert Kral, retired plant taxonomist at Vanderbilt University, who continues to be actively involved with the flora of the southeastern U.S., and is now working on a checklist and atlas of Alabama, together with R. Clark of ECU and others.

2003—Willem Meijer passes away. Meijer was the author or coauthor for a number of works in his 25 year career, including floristic studies of Raven Run in Fayette County and Jessamine Gorge in

2001—
Outbreak of southern pine beetle decimates thousands of acres of pine woods in eastern Kentucky.

2001—R. Naczi, R. Kral, and C. Bryson describe a new species, *Carex cumberlandensis*, for Kentucky and the southeastern U.S.

Jessamine County. He also authored an important study, along with J. Cambell, H. Setser, and L. Meade, on the swamp forests of the Bluegrass and Knobs. He was well known across the state, attracting both ire and admiration, for his single-minded, and often eccentric, devotion to increasing our understanding of plants and their conservation both in Kentucky and around the world. His life was remembered in a special ceremony shortly after his death, and in a second ceremony this spring, both at the UK Arboretum.

2003—T. Wieboldt describes a new species for Kentucky, *Solidago faucibus*.

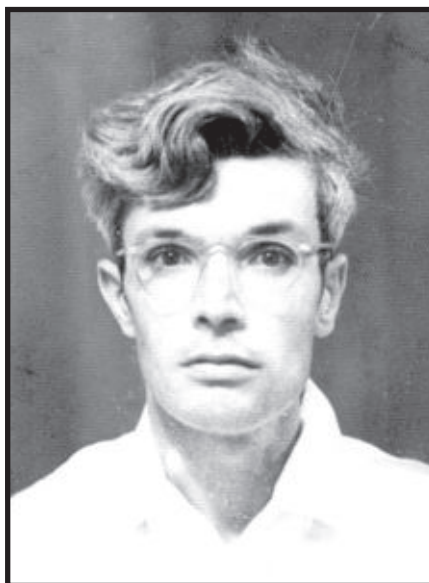
2003—*The vascular flora of cedar glades of the southeastern U.S. and its physiographic relationships*, by J.M. Baskin and C.C. Baskin. This is one of several overviews published by the Baskins on the flora and vegetation of the cedar glades and similar habitats.

2003—*Woody Flora of the Big South Fork River and Recreation Area*, by J. Shaw and B.E. Wofford.

2004—Guy Nesom describes a new species, *Gamochoaeta argyrinea*, for Kentucky and 18 other states.

2004—U.S. Forest Service releases 15-year management plan for Daniel Boone National Forest, creating much controversy over its continued involvement with burning and logging.

2004—*Wildflowers and Ferns of Kentucky*, by T.G. Barnes and S. Wilson Francis, published by the University Press of Kentucky. This is the first state-wide popular treatment of Kentucky herbaceous plants since Wharton and Barbour's book in 1971. It includes photos or drawings of 500 species, and a total coverage of 634 species.



Willem Meijer as a young man. Photo: www.wikipedia.com

2005—*Wildflowers of Tennessee and the Ohio Valley and the Southern Appalachians*, by D. Horn and T. Cathcart. This comprehensive guide includes photos of 800 species and a total coverage of over 1250 species, most of which occur in Kentucky.

2005—*Plant Life of Kentucky, An Illustrated Guide to the Vascular Flora*, authored by R. L. Jones, with the editorial assistance of J. W. Thieret, and the technical assistance of C. J. Lapham, is published by the University Press

of Kentucky. This volume treats 2,600 taxa in Kentucky, an additional 250 in surrounding states, and includes nearly 2000 line drawings.

2005—J.W. Thieret passes away. Thieret was a retired Professor at Northern Kentucky University, and at the time of his passing served as the Editor of the *Journal of the Kentucky Academy of Science*. He was also the longtime leader of Kentucky botanists, initiating the Kentucky flora project in the early 1980s, and was instrumental in its completion in 2005. He published a number of books and numerous botanical articles on the flora of Kentucky, the southeastern U.S., and the North American continent. He was a national figure, prominent as an editor of several journals and most significantly, the *Flora of North America* series. His life was celebrated in a special memorial ceremony on January 26, 2006, at NKU, and attended by friends and colleagues from across the country. He was so renowned that his passing generated 9 memorial tributes published in various journals. His family and friends published a memorial book with wonderful photographs and stories testifying to his great intellect, humor, and humanity.



John W. Thieret, photo courtesy of the Thieret family

2006—Kentucky ranks third in the U.S., behind California and Tennessee, in marijuana production. Marijuana now is the largest cash crop in the country, more than corn and wheat combined, generating an estimated \$36 billion a year.

2006—*Xeric limestone prairies of eastern United States: Review and Synthesis*, by P.J. Lawless, J. M. Baskin, and C. C. Baskin. Another major paper by the Baskins and colleagues.

2006—*Updated checklist of the vascular flora of Kentucky*, by R. Jones, published by the ECU Herbarium. This is the first checklist in 13 years, and lists 2,663 taxa for the state. The checklist is also available through the homepage of R. Jones at <http://people.eku.edu/jonesron/>.

2007—*A reference list to Field Botany in Kentucky (1985-2006)*, by R.L. Jones, R. L. Thompson, and R. C. Clark. This 21-year compilation of KY botanical literature was published in the fall issue of the *Journal of the Kentucky Academy of Science*. An online version is available at: <http://people.eku.edu/jonesron/>.

2008—*Annotated Catalog and Atlas of Kentucky Woody Plants*, by R.C. Clark, and T.J. Weckman. The first statewide county dot atlas published since Beal and Thieret's wetland book in 1986. It is currently in press at the journal *Castanea*, and is expected to be published before the end of the year. It provides county dot maps and an annotated catalog with distribution notes on the 415 woody taxa that are

know to be native or naturalized in Kentucky.

2008—*Rare Wildflowers of Kentucky*, by T.G. Barnes, D. White, and M. Evans. This very timely new book focuses on the rarest of Kentucky plants and their communities, with over 200 full-color photographs. See the advertisement on page 11.



Kentucky's big cash crop. Photo: www.tricitypartners.org



Conservancy Leads Woodlands Restoration

by Sarah Wolff, Volunteer & Outreach Coordinator
Olmsted Parks Conservancy

Frederick Law Olmsted's original design for Cherokee Park, begun in 1891, focused on the sinuous Beargrass Creek Valley and neighboring hills and ridges where Olmsted envisioned open vistas to view Beargrass Creek from the ridges through the woodlands. Unfortunately, many years of neglect and the devastating tornado of 1974 have resulted in a deterioration of this original Olmsted vision.

For a variety of reasons, a number of non-native plants have flourished in Cherokee Park, out-competing native flora for light, water and nutrients. By 2004, one such species, bush honeysuckle (*Lonicera maackii*) was covering 80% of Cherokee and Seneca parks. The other significant non-native vegetation in the park consists mostly of familiar – but invasive — vines such as English Ivy, Creeping Charlie, Bittersweet, and Porcelain Berry. In a natural area, these plants can wreak havoc by creating vine shrouds that block out sunlight preventing trees from photosynthesizing. The trees die by starvation. Adding insult to injury, the weight of the vine shroud then breaks off limbs until all that is left of a once beautiful tree is a stump.

In 2004, Olmsted Parks Conservancy, whose mission is to restore, enhance and preserve our Olmsted parks, embarked on a major project to address this deterioration problem of Cherokee and Seneca Parks. Our objective is to restore healthy woodlands utilizing today's knowledge of ecosystems blended with Olmsted's original vision. Led by a Restoration Manager, the campaign is supported by highly qualified field staff outfitted with the necessary equipment to remove invasive plants, replace them with native species, and mitigate erosion issues.

Progress made:

- Removed approximately 50% of the Bush Honeysuckle
- Planted approximately 1600 trees and shrubs
- Planted over 2000 native flowers
- Constructed 4 miles of new sustainable park trails
- Logged 7000 volunteer hours

To fund this effort, the Board of Trustees approved and launched a \$5 million campaign to save the Woodlands area in Cherokee and Seneca Parks. To date the campaign, co-chaired by Heather and Marshall Farrer, has raised nearly \$3.2 million. While much of the invasive removal work will continue through 2012, it is anticipated that the campaign goal will be reached by first quarter 2009. Please contact Kate Chandler, Director of Development, for more information on how you can help.



OLMSTED PARKS
CONSERVANCYSM



Check out our website at

www.knps.org

for new membership forms, upcoming events, past newsletters, and grant information.

NOTE: OUR MAILING ADDRESS HAS CHANGED. See page 2.

KNPS

FALL CONFERENCE 2008

November 14th and 15th
Mammoth Cave National Park
Rotunda Room, Mammoth Cave Hotel

SPEAKERS:

November 14th at 7:00 p.m.

Mr. Randy Seymour, author and botanist, will talk about his field work for writing *WILDFLOWERS OF MAMMOTH CAVE NATIONAL PARK*.

November 15th at 7:00 p.m.

Dr. Dwayne Estes, botanist, Austin Peay State University and Curator of the Herbarium will speak about "Connections between the Kentucky and Tennessee Flora: species that occur near the Kentucky border in Tennessee that Kentuckians should watch out for".

Saturday field trips to be arranged.

Call 270-758-2225 for more information. Rooms are available for \$60.00 a night plus tax. Food service also available at Hotel.



Kentucky Conservation Committee Annual Meeting

Saturday September 20, 2008

10 am to 3:30 pm

Blackacre State Nature Preserve

With a 3:30 to 6:30 pm post-conference
tour of Floyds Fork

The KCC works for sustainable use of renewable natural resources, prudent use of non-renewable resources, conservation and preservation of critical and unique areas, and a healthful environment for all Kentuckians. The annual meeting will provide participants with an update of the Task Force's progress, and involve them in discussions of where to go from here, regarding proposed legislation for the 2009 session.

The annual meeting will conclude with a tour of the Floyds Fork Corridor project, the largest new park project in the United States. More information is available at www.kyconservation.org.



Rare Wildflowers of Kentucky provides an introduction to Kentucky's signature rare plants with 220 full-color photographs by naturalist and award-winning photographer Thomas G. Barnes. The book draws attention to the beauty of Kentucky's old-growth forests, prairies, wetlands, and other habitats while focusing on the state's endangered flora.

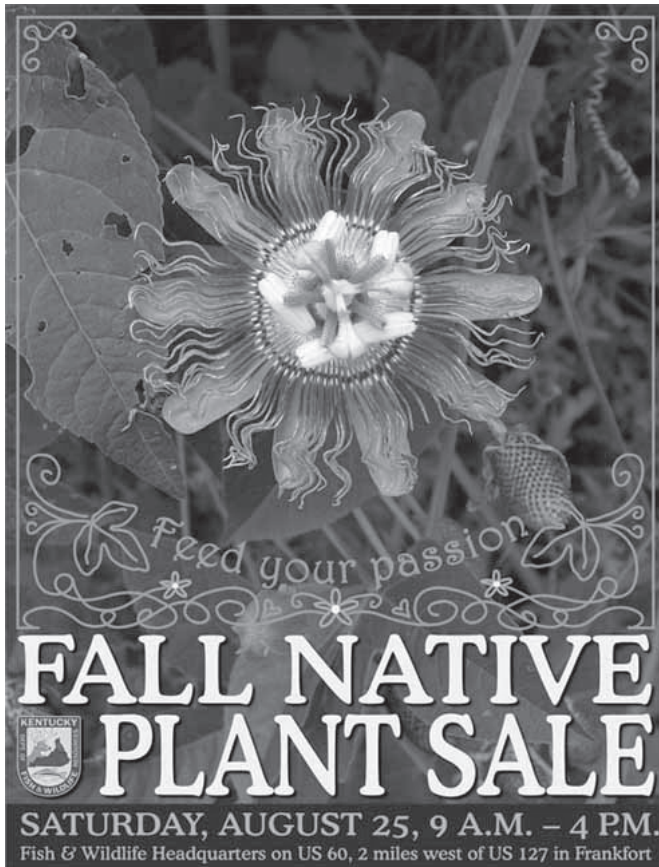
The authors, Thomas Barnes, Deborah White and Marc Evans, note that as of this year, 275 plant species in Kentucky are considered endangered or threatened, with more than 50 potential additions to the list. The book includes an overview of ecological communities and the ways in which they are threatened, an explanation of how various plants have become endangered, and suggestions for conservation and preservation.

The Bluegrass State's rare wildflowers take center stage with gorgeous color photography and descriptions, organized by habitat. *Rare Wildflowers of Kentucky* will appeal to any nature lover, and the inclusion of references, a complete list of scientific and common species names, and a list of each plant's endangered status makes the book especially useful to gardeners and to botanists and horticultural professionals. See <http://www.kentuckypress.com/viewbook.cfm?ID=1461&Group=54> for ordering information.

Lady-Slipper to be available to members on-line!

Beginning with the fall issue (23:3), members with e-mail addresses on file will be sent a password to access the Lady-Slipper via the KNPS website. Please check your mailing label on this summer issue to verify your email address. If no email address appears on your label, we do not have your email information. Members without e-mail addresses on file will continue to receive a paper copy of the newsletter as usual.

To **add** or **correct** your email or to let us know that you would prefer continuing to receive the paper newsletter, please contact Amy McIntosh at amy_mcintosh6@eku.edu as soon as possible (**please put "KNPS e-mail" in the subject line**).



Native Plant related Events

Natural Bridge Invasive Species Volunteer

Workshops: Aug 2, Sept 6, Oct 4, and Nov 1, 2008

Help stop this invasion of non-native exotic plants by volunteering to assist the naturalist staff in pulling and cutting some of the worst invaders! Each Volunteer day begins at 9:00am in the Hemlock Lodge lobby, and ends whenever you get tired! Pre-registration is encouraged. Please contact Noelle Grunwald at noelle.grunwald@ky.gov for more information. Volunteers will be eligible for our new Invasive Species Incentive Program.

Kentucky Conservation Committee Annual Meeting

Saturday September 20, 2008

10 am to 3:30 pm

Blackacre State Nature Preserve

With a 3:30 to 6:30 pm post-conference tour of Floyds Fork
See page 11 for details.

Olmsted Parks Conservancy Events

Trail Walks

Saturdays: Aug 9, 16, Sept 20, Oct 12, 19, Nov 2.

Park Champion Volunteer Dates

Most Saturdays from July through October.

For more information contact Sarah Wolff at 432-2677 or email sarahwolff@olmstedparks.org.

SEE PAGE 2 FOR CONTACT INFORMATION.

*(Return address below is for
POST OFFICE USE ONLY.)*

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