

Naturally Kentucky

Summer 2000

Number 32

Raiding Mother Earth's Medicine Chest

by Deborah White, Senior Botanist

Like most issues where humans are involved, the motivation for herb dealing ranges from severe reverence to exploitation. The traditional folk and new wave have been married into a movement that has resulted in a million dollar industry. Herb collection in parts of Kentucky has spanned several generations. This interest in herbs combined with the challenges of making a living in rural counties have resulted in increased collection for sale to pharmaceutical companies. And this all adds up to impacts to these highly sought native plants.

The two species that have been the most severely affected by medicinal collecting in Kentucky are American ginseng (*Panax quinquefolia*) and Goldenseal (*Hydrastis americana*). While the sale of these herbs is regulated by federal law, there are no specific laws against collecting on private land with landowner permission. However, substantial poaching has been reported from Kentucky's public lands. U. S. Fish and Wildlife Service reports 16,500 pounds of ginseng collected from Kentucky, twice that of any other state. The price of ginseng has been \$400 per pound in the last few years, which is driving the collection frenzy. While some ginseng is now farm grown, a premium price is paid by Asian companies for wild grown roots because their consumers are looking for roots that look like the human body and are thus thought to have more healing power. Consumers in the U. S. are not so picky (a pack of ginseng can be bought from the Quickmart counter), but the demand has soared.

Ginseng (primarily the two Asiatic species of *Panax*) has been used in China for thousands of years

The U.S. Fish and Wildlife Service calculates the minimum value of wild ginseng to the state economy as \$4,535,000. This number is based on the amount harvested. This figure is the highest in the nation and twice that of any other state.

to build energy and zest, sharpen vision and hearing, increase the efficiency of the brain, restore virility and prolong life. It has been a gift from emperors and in some periods was more valuable by weight than gold. The genus name *Panax* is taken from the word for panacea meaning "cure-all."

American ginseng occurs throughout the eastern U.S. and as far west as North Dakota. Appalachian regions have the strongest traditions in ginseng harvest or "sang" gathering. Responsible sang harvestors did not collect until the seed was mature, usually around September, and distributed the fruit on the forest floor. Patches would only be visited on a rotation, and only certain size plants were taken. With the rising price and demand for the root, these techniques that prevented depletion of these plants seem to have been forgotten.

The use of goldenseal has also grown. One request for approval to sell harvested root from Kentucky (counties include Floyd, Knott, Letcher, Logan, Martin, Pike and Trimble) was for a total of 89,000 plants. All parts of the plants are used but, as with ginseng, the roots are thought to have the highest medicinal value. Pulverized roots were traditionally prepared as a tonic for the treatment of mouth sores, eye conditions, blood pressure, and used as a diuretic.

We have noticed during field work that ginseng and goldenseal are seen less frequently and both have been on KSNPC's rare plant list at one time. We need to review the status of these species and determine whether the alarming rates of herb collection should be more closely monitored.

Carl Cook Receives Commission's Biodiversity Protection Award

by Ellis L. Lauder milk, Aquatic Biologist

The Commission has selected Mr. Carl Cook of Center, Kentucky (Metcalf County), as the fourth recipient of our agency's annual Biological Diversity Protection Award. The award, given to a Kentuckian who has contributed significantly to the protection of Kentucky's biological diversity, was presented to Mr. Cook during the Commission's quarterly meeting on December 9, 1999.

The story of Carl's lifelong commitment to biodiversity was transformed in 1936 when, at age 10, Carl and his family decided to visit a popular (at the time) summer resort located in Sulphur Well, Kentucky. Carl was busy collecting butterflies when he was approached by a gentleman who inquired about his activities. Carl indicated that he was trying to collect butterflies for a 4-H project. The gentleman asked if he had ever collected any dragonflies, but Carl stated that he didn't know what dragonflies were. The stranger began pointing them out along the South Fork Little Barren River, which flowed through the resort community, and asked if Carl would be willing to collect some for a reward of 10 cents. Carl eagerly agreed, bringing him several specimens of the American rubyspot (*Hetaerina americana*), now more appropriately referred to as a damselfly. As it turns out, the stranger was none other than Dr. Harrison Garman, a retired University of Kentucky entomologist who often visited the resort. This chance meeting led to what has become a 63-year (and counting) commitment to the dragonflies and damselflies (Odonata) of Kentucky and the world. The old, two-story hotels, delapidated and overgrown with vegetation, still stand today providing a surreal reminder of a bygone era in Kentucky.



Carl Cook - 1999 Biodiversity Winner

In 1947, eleven years after his encounter with Dr. Garman, Carl published his first scientific paper on Kentucky and Tennessee dragonflies of the genus *Somatochlora*. His 1951 paper documented 35 species previously unrecorded in the list of Kentucky dragonflies published in 1924 by, you guessed it, Dr. Garman. Carl has long been recognized as a world authority on the Odonata, and has described or co-described at least eight species of dragonflies and four species of damselflies new to science. While his interests in insects are widespread, his real passion is for the primarily stream-dwelling dragonfly family called the Gomphidae. He has always generously shared information and expertise on rare Kentucky insects with our agency, and has led several expeditions in search of the rarest dragonflies. His personal collection of odonates has been utilized for the past 50+ years by odonatologists, and has been bequeathed to the Florida State Collection of Arthropods (home of the International Odonata Research Institute) at the University of Florida.

I have had the pleasure of perusing some of Carl's extensive collection, spending time with him in the field in search of rare dragonflies, and observing first-hand his love and appreciation for Kentucky's natural heritage. Sitting on the banks of the Middle Fork Kentucky River, we talked about the changes in species composition he has observed at some of his favorite sites, and what the future holds for Kentucky's dragonfly fauna. Suddenly, Carl exclaimed, "There goes *Stylurus plagiatus*!" Even in his 70's, the excitement displayed by Carl in pursuit of a dragonfly is unsurpassed. The commissioners and staff extend our sincere appreciation to Carl for his lifelong contribution to the identification and protection of a part of Kentucky's biological diversity.

The Butterflies and Moths (Lepidoptera) of Kentucky: An Annotated Checklist

Dr. Charles van Orden Covell, Jr.

The first comprehensive checklist of the butterflies and moths of Kentucky

“In fact this is probably the most complete such checklist published for any U.S. state.”

— Paul A. Opler, Ph.D.
Department of Bioagricultural Sciences
Colorado State University
Fort Collins, Colorado 80523



The Butterflies and Moths (Lepidoptera) of Kentucky: An Annotated Checklist is the result of nearly 40 years of assimilating data on the distribution and abundance of this diverse group of insects in the Commonwealth. Authored by University of Louisville professor, Dr. Charles van Orden Covell, Jr., the 220 page book includes collection data for 2,388 butterfly and moth species documented from the state, with special reference given to species found in 68 parks, reserves, or other important habitats. Brief comments on the ecology of several species have also been included, but no photographs or color plates were utilized (except a color cover photograph of a male and female Diana Fritillary, *Speyeria diana*). Of particular interest is the section on the history of butterfly and moth investigations in Kentucky beginning with a visit to Kentucky by noted British lepidopterist Edward Doubleday in 1837. Published as part of the Kentucky State Nature Preserves Commission Scientific and Technical Series (ISSN 1526-4394), copies may be ordered directly from the Commission by making check payable to “LEPBOOK.”

Order Form: *The Butterflies and Moths (Lepidoptera) of Kentucky: An Annotated Checklist*. AVAILABLE DECEMBER 1999

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Kentucky State Nature Preserves Commission Scientific and Technical Series 6

DIRECTOR'S ANNUAL REPORT

by Don Dott

It's hard to believe I already have been with the Commission over a year and a half. A lot has happened and I have learned a lot, which has been much easier considering the assistance I have from our expert and committed staff. I hope to be here for a long time to come (there is much more I have to learn) because there is still much more for KSNPC to accomplish. Following are some of the highlights of the past 18 months:

BLANTON FOREST STATE NATURE PRESERVE

is probably the biggest single accomplishment of 1999. This acquisition project has been ongoing since 1994. Two signed options commit the owners to sell the remaining 1200+ acre tract of old growth forest, and a second parcel of mature timber adjoining the old growth. More buffer lands are being sought. Even the bad news at Blanton Forest has had a silver lining. Illegal timbering scarred about 20 acres of the old growth, but restoration of the road cut by bulldozer to remove the timber is complete and the recovery is being studied by University of Kentucky researchers. It presents a valuable research opportunity to observe the recovery of previously undisturbed soils in an old growth forest ecosystem.

Funds are needed to purchase these two key tracts. A fundraising project is well underway. It is being coordinated by Kentucky Natural Lands Trust, a non-profit organization. I will provide information on where to send your contributions (large or small – we need them all) in the next issue. Save your nickels, dimes and dollars!!

B L A C K MOUNTAIN is still the highest elevation in the state, and we are still trying to protect it. Negotiations to resolve whether public access will be allowed on the mountain top are continuing and appraisals are being

completed to determine a fair market value for the timber and mineral interests that we expect to be sold to the state. The legislature has fortunately provided \$4.1 million for the acquisition of mineral and timber rights. Black Mountain is home to a unique assemblage of rare and unusual species adapted to its higher altitude and cooler, more severe climate. It is a preeminent assemblage of biological diversity in the state. This is a landmark deal for Kentucky that must succeed!

KSNPC NOW IN LEWIS COUNTY Crooked Creek Barrens is our newest nature preserve. It is a Lewis County home for an unusual oak barrens community and adjacent oak-hickory forest. Prairie species such as big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and prairie dock (*Silphium terebinthinaceum*) occur in the barrens area. This site also protects four rare plant species: starflower false Solomon's-seal (*Maianthemum stellatum*), white rattlesnake-root (*Prenanthes alba*), slender blazing star (*Liatris cylindracea*) and scarlet Indian paintbrush (*Castilleja coccinea*). The on-site dedication ceremony went well, and we were very impressed by the level of local interest and support. We have plans to expand the 60 acre preserve and are now negotiating to acquire more land.

TAGS FOR WHEELS You can help KSNPC and keep your transportation legal at the same time! When you renew your license plate in 2000, ask for one of the "Naturally Kentucky" plates. You have three choices, a Kentucky Warbler, a Wildcat (do you bleed blue?) or a Cardinal (do you bleed red?) For only \$10 more, you can get one of these attractive plates, make a statement that you support the environment, and make a contribution to the

Next
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Kentucky Heritage Land Conservation Fund. This fund provides money for five state agencies (KSNPC, Division of Water's Wild Rivers, Kentucky Department of Fish & Wildlife Resources, Parks and the Division of Forestry each get 10% earmarked) and the other 50% enables local governments to purchase important natural areas. This is our primary source of funds to acquire new nature preserves.

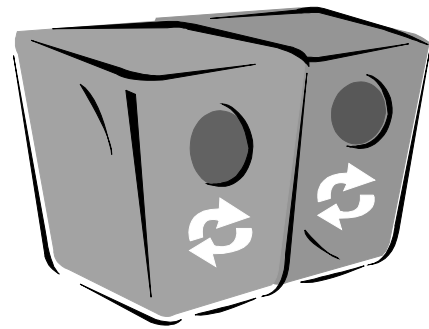
AS WE TRAVEL THE ROAD LESS TAKEN, we hope to find ourselves on the crest of Pine Mountain along the Kentucky/Virginia state line. The vistas are spectacular! Joyce Bender, Kyle Napier and I have been working with the Pine Mountain Trail Conference to help create a 100 mile trail along the crest of Pine Mountain from Breaks Interstate Park in Pike County to Pine Mountain State Resort Park in Bell County. We expect the trail to cross five nature preserves along the mountain. Trail construction is beginning on the first leg, but much work remains. If you would like to help with this outstanding project, please call Joyce or Kyle at KSNPC, or Shad Baker, the Letcher County Extension agent (606-633-2362). The White House Millennium Council designated this trail as Kentucky's only Millennium Legacy Trail in a ceremony presided over by First Lady Hillary Clinton. The ultimate goal is to connect the trail with Cumberland Gap National Park and a similar "linear park" trail in Tennessee leading to Signal Mountain in Chattanooga.

ONCE THE WINDS STOPPED HOWLING, our Stewardship Program got started on the spring prescribed fires. Due to last year's horrendous drought, the Stewardship's Section was forced to exercise a great deal of self-restraint and cancel their fall burn plans (the statewide ban on fires made it a little easier). This unfortunate weather prevented the burning of some of the prairie, glade and barrens ecosystems that need fire to counter the invasion of woody species and enhance native vegetation. Units at Logan County Glade, Chaney Lake, Eastview Barrens and Crooked Creek Barrens State Nature Preserves have been completed.

MY FIRST YEAR AND A HALF as Director of this small but vitally important agency has been a true learning experience. Activities this year have run the gamut from

Commission meetings and preserve visits (with many yet to go) to personnel matters and learning the KSNPC budget. As I believe I have the large part of this learning curve behind me, I expect to be more effective and better able to provide the management skills the KSNPC deserves. This agency has a truly critical mission and I can honestly say that I could not have been given a better staff with whom to achieve it.

REMINDER!!!



UNCOVERING THE SILVER LINING AT BLANTON FOREST

by Kyle Napier, Southeastern Regional Preserves Manager

It was a warm delightful morning in mid May, 1999 when several fellow stewardship staff members and I led a group of dedicated volunteers on a leisurely hike along the crest of Pine Mountain. Our plans were to cross the upper portion of Blanton Forest State Nature Preserve and descend the mountain through the Watts Creek drainage, an adjoining privately owned tract of old growth. This outing was part of our annual volunteer appreciation hike and was designed to showcase Kentucky's largest remaining old growth forest.

We made our trek across the preserve and Mike Allison and I led the way up the ridge to enter the Watts Creek drainage. I was feeling excited about introducing our volunteers to this rich section of old growth. I could not wait to see their faces when they finally laid eyes upon it. When Mike and I reached the summit we were surprised by not finding the huge oaks that had survived for centuries, but rather their tops lying scattered upon the ground. We looked at each other in disbelief, neither knowing what to say. At that moment I just wanted to yell to the others not to come any closer, wishing I could spare them from this awful discovery.

After further inspection, the group discovered a road had been bulldozed over the crest from a logging operation on the north side of Pine Mountain. There were between fifteen to twenty acres damaged by freshly bulldozed roads throughout the upper drainage of Watts Creek. These soils that had never been turned before were now severely disrupted. The rich top soil that supported a high diversity of plant life was now piled with other debris in berms. It was most disturbing to discover four stream crossings filled in with no place for the water to flow. Later we found that approximately 150 trees were cut from the site, the majority were the ancient oaks that once had graced the area.

There is no doubt that the upper portion of the pristine Watts Creek was forever scarred as a result of this unspeakable trespass. Everyone on the hike that day was devastated by the senseless greed of the act. Since that time I have had trouble removing the initial sight from my mind. It troubles me that such a thing can happen not only to Blanton Forest, but to other sites as well. I really had no desire to see this site again, however as manager I have revisited it many times.

We quickly made plans to re-contour the roads, create a seed bed, stabilize slopes, and allow for the proper

drainage of Watts Creek. After several site visits with UK professors Mathew Smidt, Charles Rhoades and Randall Kolka, a site remediation plan was developed. Thanks to the generosity of Blanche and C.V. Bennett, owners of Sugar Ridge Land Company, equipment and operator time was donated. I must stress that the time spent by the Bennetts carefully choosing the proper dozer operator played a vital role in the project's success.

Remediation got underway on September 20 and was completed on September 24, and included twenty hours of equipment operation. Our equipment operator was Jeff Bowling, a master logger with a great deal of experience in forest reclamation. Jeff operated the D5 dozer like an artist, shaping and filling the roads in a fashion to recontour the slopes. By back dragging side berm material and working it smoothly over the road cuts, he attempted to restore the land to its original contour. He built several water bars to control erosion and allow proper drainage of the steep areas. The compacted soils that dammed the stream at crossings were removed with a sensitive hand. The drains were reshaped to simulate their original conditions, and it was really good to see Watts Creek flowing freely again. To avoid further damage, Jeff did all the work within the disturbed areas. The remediated area was sown with annual rye in an effort to hold soil until native vegetation can become established. Thanks to Jeff's excellent work the project turned out better than I could have ever imagined.

The Blanton Forest trespass was unfortunate. However, it created a unique opportunity to study the effects of timber harvesting on a previously undisturbed forest. Thanks to the Kentucky Natural Lands Trust, \$25,000 was awarded to UK professors Randall Kolka and Charles Rhoades to develop and implement a site monitoring plan. The plan will assess the effects on water quality, soil nutrient status, and forest floor plant communities.

Several disturbed sites have been prepared using different methods of treatment. This will allow the researchers to monitor the degree of recovery for each method and could play an important role in future forest reclamation projects. Data loggers will monitor soil temperature in remediated roadbeds as well as in the surrounding undisturbed forest. In addition to overall monitoring of disturbance impacts and recovery of the area after remediation, the three year project will allow the researchers to evaluate techniques for accelerating restoration of the roadbeds and surrounding area.

Tax Check-off and Heritage Land Conservation Fund Programs Support Invaluable Research Efforts to Help Guide Stewardship

by Bree McMurray, Stewardship Assistant

In addition to inventory and monitoring undertaken by Commission aquatic biologists Ronald Cicerello and Ellis Lauder milk, terrestrial biologist Brainard Palmer-Ball, botanist Deborah White, and ecologist Martina Hines on state nature preserves, KSNPC has benefited from the efforts of university and independent researchers. For the past five years, the Stewardship Program has been coordinating biological and ecological research on state nature preserves. Some of our properties were purchased with funds from the Kentucky Heritage Land Conservation Fund (KHLCF) Board. A portion of the allotment for management must be used for research on those preserves. Since 1997, three projects received grant awards supported by KHLCF. Dr. Guenter Schuster from Eastern Kentucky University (EKU) recently completed an aquatic invertebrate study at Bad Branch State Nature Preserve (SNP). Dr. Edmund Zimmerer at Murray State University (MSU) has just completed a project at Terrapin Creek SNP to assess the population density of Kirtland's snake (*Clonophis kirtlandii*) and to provide a general herpetofaunal inventory. Timothy (EKU) and Judith (Berea College) Weckman are conducting a survey of vascular plants at Pilot Knob SNP. In addition to these contracts, I have initiated a small mammal survey of Eastview Barrens SNP with KHLCF support.

Another source of financial support for research has been the Small Grants Program. This program is supported by the Kentucky Nature and Wildlife Fund Tax Refund Check-off Program. Since the small grants program was initiated in 1997, KSNPC has awarded contracts to several institutions and individuals to support eleven projects on state nature preserves. Western Kentucky University (through Drs. Michael Stokes, Albert Meier and, formerly, Jeff Jack, now at the University of Louisville) has had contracts to survey aerial and aquatic invertebrates and study water quality at Chaney Lake SNP, to study grassland fauna at Raymond Athey Barrens SNP, and to study disturbance at Blanton Forest SNP. Dr. Patrick Calie and James Beck (EKU) were awarded funds to study the U.S. Fish and Wildlife Service endangered Short's goldenrod (*Solidago shortii*) at Blue Licks SNP. This study is continuing with support from Section 6 funds from the USFWS. Dr. Charles Rhoades of the University of Kentucky (UK) recently completed a study at Raymond Athey Barrens

SNP on soil nutrient response to prescribed fire. Dr. Alan Risk of Morehead State University conducted an inventory of bryophytes and vascular plants at Hi Lewis Pine Barrens SNP. Dr. William Spencer (MSU) is studying the hydrology of Terrapin Creek SNP and Obion Creek State Natural Area. Northern Kentucky University's Dr. Robert Naczi completed a survey for sedge species (*Carex*) on 10 of our nature preserves. Ms. Tracy Hawkins of Lees College was awarded contracts to conduct a floristic survey, perform community sampling, and document fire history at Hi Lewis Pine Barrens SNP. Mr. Charles Wright sampled for the American burying beetle (*Nicrophorus americanus*) at Axe Lake and Metropolis Lake SNPs. Unfortunately, the Commission had to discontinue the Small Grants Program due to budget constraints. All tax check-off funds will be needed to support preserve management staff salaries for the next biennium.

In addition to the research supported by these funding sources, there are countless other projects which have been undertaken voluntarily on state nature preserves. Many are in support of Master's theses and other work at universities and colleges around the state. Mr. Brian Sandefur of UK has initiated a study of the bogs in Blanton Forest for his Master's thesis. Mr. Michael Quillen and Mr. Jamey Thompson of Maysville Community College are generating an environmental assessment and GPS map of ecological communities at Crooked Creek Barrens SNP, our newest preserve. Dr. Thomas Barnes and Mr. Brian Washburn of UK are investigating the effectiveness of an herbicide for tall fescue (*Festuca elatior*) eradication and the release of native warm-season grasses at Raymond Athey Barrens SNP. Other studies have simply been motivated by curiosity. Volunteers Betty Beshoar and Mark Roberts are inventorying the flora at Tom Dorman SNP (formerly Kentucky River Authority Palisades SNP) to add to the number of known plant species. At the same preserve, volunteer Preserve Monitor Marty Bray is inventorying spider species. The results of all research on state nature preserves are used to help the Stewardship Program improve management goals and to increase our knowledge of the preserves. The Stewardship Program would like to thank KSNPC staff and scientific advisors for their assistance in reviewing research proposals.

Sherrri Evans Memorial Fund

Through the generosity of the East Kentucky Power Cooperative we have started the Sherri Evans Memorial Fund in honor of the memory of Sherri Evans who passed away in September of 1999. Sherri was a biologist of the most dedicated sort. She spent the last 17 years diligently working to protect Kentucky's unique natural resources and educate the public about their values. Sherri started her environmental protection work as a biologist for the non-game wildlife program at the Kentucky Department of Fish and Wildlife Resources. She then took on the task of coordinating the Kentucky Division of Water Wild Rivers Program where she worked fervently to protect the few remaining high quality streams and rivers in the Commonwealth. Sherri left the Wild Rivers Program to start Shooting Star Nursery, Kentucky's first nursery dedicated to propagating and promoting Kentucky's native plants. Sherri then went back to Fish and Wildlife to help them begin their native plant program. Sherri's greatest passion was to protect the natural biodiversity of Kentucky. One of her tools to accomplish this was to promote the use of native species in habitat restoration, as well as home landscaping. Sherri's energy and dedication to the field of conservation is greatly missed. To keep this legacy alive we have established the Sherri Evans Memorial Fund. We can think of no better way to honor Sherri's memory. The fund will be used to support research on Kentucky state nature preserves for projects that benefit native plant and animal species. If you would like to make a contribution to this fund, please send your check to the KSNPC, payable to the Sherri Evans Memorial Fund. We will make good use of the funds in a manner that Sherri would appreciate.

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It is the mission of the Kentucky State Nature Preserves Commission to protect Kentucky's natural heritage by: (1) identifying, acquiring, and managing natural areas that represent the best known occurrences of rare native species, natural communities, and significant natural features in a statewide nature preserves system; (2) working with others to protect biological diversity; and (3) educating Kentuckians as to the value and purpose of nature preserves and biodiversity.

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