

Fish Consumption Advisory at Metropolis Lake State Nature Preserve

By Ronald R. Cicerello

We are sorry to report that recent analysis of largemouth bass and channel catfish collected from Metropolis Lake near Paducah revealed elevated levels of polychlorinated biphenyls (PCBs) and mercury in their tissue. The fish were collected in October 1999 with the assistance of Kentucky Department of Fish and Wildlife Resources (KDFWR) personnel, and tissue was analyzed for organic contaminants (PCBs and chlordane) and heavy metals (mercury, cadmium and lead) by the Kentucky Divisions of Water and Environmental Services. In July, the Kentucky Department for Public Health, Environmental Protection and Fish and Wildlife Resources issued a fish consumption notice for Metropolis Lake. They recommended to the public that no more than one meal (one-half pound) per month of fish from the lake should be eaten. Women of childbearing age, children and people who eat fish frequently are most susceptible to a build up of PCBs in their body. To reduce PCB buildup, eat only fillets from which the fat has been removed. Mercury is distributed throughout fish tissue, so the only way to reduce exposure is to eat fewer and smaller fish.

PCBs are manmade compounds used in various kinds of electrical equipment, paints, plastics and other commonly used products. Manufacture of PCBs was banned in the U.S. in 1979 but equipment containing PCBs is still in use. Some PCBs remain in the environment many years and have been found in plant and animal tissue worldwide. They are fat-soluble and accumulate in aquatic organisms. Humans are exposed to PCBs mainly through eating fish and seafood products. PCBs have been shown to cause cancer and other serious health effects in animals.

Mercury occurs in the environment through natural processes and human activities. It also accumulates in fish and human tissue. Consumption of contaminated food can affect the nervous system, cause developmental problems, and may cause cancer.

We will continue to study the contamination of Metropolis Lake fish and hope to identify the source(s). In the meantime, please limit your consumption of fish from Metropolis Lake. If you have questions about health effects of these contaminants, please call the Kentucky Department of Public Health (502/564-7181). Contact the Commission with questions about the preserve.

Drought Leaves Mussels High and Dry

By Ronald R. Cicerello

Most Kentuckians will long remember the drought of 1999. For many, this long, dry period was an inconvenience during which car washing and lawn watering were not permitted. But others suffered economically from business closures and crop failures. The drought also affected streams and the organisms living in them. Small streams, such as Stoner, Grassy, and Cruises creeks in the Licking River basin of north-east Kentucky, ceased to flow. Aquatic habitat was reduced to isolated, stagnant pools of warm water with algal blooms. Stream flow in larger rivers like the Kentucky, Licking, and Green was greatly reduced, exposing normally submerged shorelines and gravel bars. In streams with braided channels, some channels were left high and dry as water flowed only through the deepest channel.

Droughts affect aquatic organisms by exposing them to elevated temperatures, reduced oxygen levels, aquatic and terrestrial predators, disease and other challenges. Aquatic organisms respond in many ways. Some are stranded by receding water and perish. Motile animals move to deeper water, and others burrow into the bottom. Some animals are resistant to low dissolved oxygen levels, have resistant life stages (e.g., gelatinous coated eggs) or experience delayed growth.

In late August 1999, Don Dott, Ellis Lauder milk, and I observed the impact of the drought on freshwater mussels in the Licking River. We were shocked by the large number of dead and dying mussels that littered the shore at eight sites we visited from Visalia upstream to the North Fork. At most sites, it was difficult to avoid stepping on dead and dying mussels while walking the shoreline! Although we returned many living mussels to the river, many more were left to perish.

Of 43 species living in the Licking River basin, we found 34 alive or recently dead. Among them were four rare species: the fanshell (*Cyprogenia stegaria*), a U.S. Fish and Wildlife Service endangered species present in relatively large numbers; several elktoes (*Alasmidonta marginata*); a few longsolids (*Fusconaia subrotunda*); and even a few small, easily overlooked salamander mussels (*Simpsonaias ambigua*). The abundance of some species was surprising. For example, the tiny and often difficult to find fawnsfoot (*Truncilla donaciformis*) was more common than formerly thought.

How many mussels died along the segment of the Licking River we visited? This is difficult to determine, but we can make a rough, non-scientific estimate. Within one 581 sq. ft. area, we counted 238 recently dead mussels. We assume that (1) only half of the 52 river miles visited provided suitable
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Director's Update

By Don Dott, Jr.

Black Mountain Deal Closes! You may have seen news reports that the owners of the mineral and timber rights atop Black Mountain have closed the deal to sell these rights to the Commonwealth. The Commonwealth has gained ownership of coal and timber rights on the mountain above 3,600 feet, and a limited conservation easement from 3,000 to 3,600 feet that prevents further mining. An existing mining operation near the crest of the mountain will continue. Although this does not transfer the actual surface rights to the state, the staffs of the Commission, the Division of Forestry, the Kentucky Department of Fish and Wildlife Resources and researchers from Kentucky universities will finally have access to the upper elevations of the mountain to perform biological inventory and research. This is an extremely important first step that will allow us to begin a much needed inventory. Distinguished as the highest point in Kentucky, Black Mountain's upper reaches support a cooler, wetter habitat found nowhere else in the state. Unfortunately, we cannot establish a dedicated nature preserve at the top of the mountain or provide public access without the surface rights, and our access rights are limited by an agreement that requires an annual access fee payment by the state of about \$112,000 per year. Access rights were not obtained for this year, but can be obtained on a yearly basis. The transfer of rights will certainly increase our ability to perform our fundamental task, to document the biodiversity of Kentucky.

The Blanton Forest project is proceeding well. Since the last newsletter, Marc Evans and Kyle Napier have led several field trips to the old-growth forest for potential contributors and to generate publicity. We had excellent press coverage in the Lexington Herald-Leader and on WKYT's "AfterNoon" show on Channel 27. One of the show's hosts and former Harlan County resident Barbara Bailey generously agreed to be the Kentucky Natural Lands Trust (the fundraising entity) campaign chairperson for Lexington and eastern Kentucky. Greg Stotlemeier provided excellent exposure on Lexington's WTVQ (Channel 36) news program. We also have plans with the Kentucky Natural Lands Trust for promotion in Louisville, western and northern Kentucky, and hopefully the Knoxville, Tennessee area.

Birds and Knobs. One of my most interesting activities was helping Dave Skinner with his Monitoring Avian Production and Survivorship (MAPS) project at Pilot Knob State Nature Preserve. This is a bird capture and banding project designed to monitor the population and health of neo-tropical migratory songbirds in a nationwide effort. Populations of neo-tropical birds are declining primarily due to habitat degradation and loss, particularly of large unfrag-

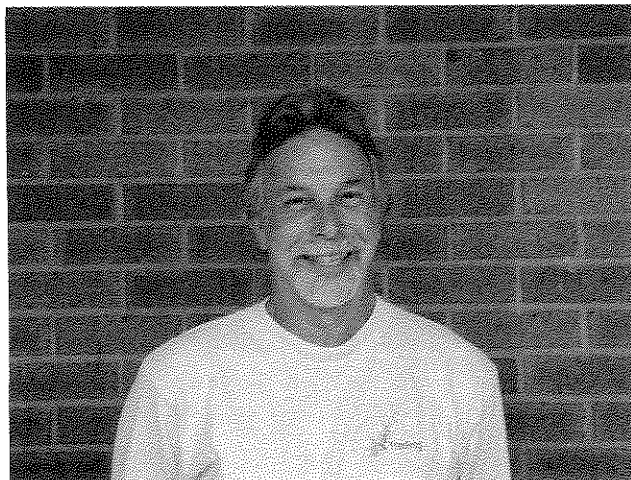
mented forested areas. The MAPS project will provide valuable data to help reveal the status of these wonderful songbirds that enrich our world.

Almost last, but certainly not least! KSNPC Chair Clara Wheatley and Commission Secretary Ken Jackson have been asked by Governor Patton to serve another term with the Commission. We are very happy they have been kept on board, as they bring a wealth of experience and knowledge regarding our agency. I am pleased to continue working with Clara and Ken for another two-year term!

Finally, a sad note. We have unfortunately lost the very capable services of Barry Howard to retirement. But I guess "sad" depends on your perspective. He was a great asset as our protection specialist and he often provided an extra "right arm" to me. Barry will be missed much and I wish him the best in his future exploits!

Marc Evans - Outstanding Employee!

Marc is being recognized for his exemplary work as one of the Natural Resources and Environmental Protection Cabinet Outstanding Employees for 1999. Secretary James E. Bickford of the NREPC will present Marc with an award in October at the 25th Annual Governor's Conference on the Environment. This recognition is not only for his longtime dedication to a natural areas inventory of Kentucky, but particularly for his persistent efforts over nearly five years to acquire the remaining privately owned old-growth forest adjacent to Blanton Forest State Nature Preserve. Marc has also been very instrumental in the fundraising efforts for this purchase. We are proud to see him receive this recognition.



We Will Miss You Barry!

By Ellis L. Laudermilk

I first learned of Barry's impending retirement a few days before his official announcement to the KSNPC staff. It was a Friday afternoon and Barry strolled into my office and calmly stated that he would be retiring at the end of July. My first instinct was to try to persuade him to stay a little longer, but I could quickly tell that, as usual, this was something he had given a great deal of thought to, and he was completely content with his decision. I saw the matter, however, as an all too brief period of working with someone that has become a very good friend.

As many of you know, Barry Howard began work with the Commission in October of 1996 as our Land Protection Specialist. His principal duties involve acting as the Commission's primary liaison with landowners whose land is worthy of protection because of high-quality natural communities and/or unique species assemblages. When he inherited the job much of the Commission's data on sites considered important for protection was contained only in manual files. With assistance from Charlie Lapham, Barry developed a sophisticated database that will allow Commission staff to maintain, update and utilize site data in a more efficient way. He also prepared topographic maps outlining property tracts within the boundaries being considered for protection at each nature preserve and potential preserve. Furthermore, he served as the Commission's Acting Director for approximately eight months, providing steady guidance during one of the agency's most tumultuous times.

Barry's work in state government began in May of 1978 when he took a position as a Seasonal Recreation Leader at Buckhorn Lake State Resort Park. He left to be the Park Naturalist at Pine Mountain State Resort Park and later became the manager of Kingdom Come State Park. Levi Jackson Wilderness Road State Park was the next and last stop for Barry in the park system. He became the park manager in May of 1988, and remained there until his arrival at the Commission. He now holds the distinct title of being the first Commission employee to retire.

During his tenure in state government, his love of Kentucky and its natural heritage was nurtured through his work, membership in the Kentucky Natural History Society, and hobbies. While some of his vacation time was spent traveling to national and state parks across the country, his love of Kentucky prevailed and he plans to remain in the state. Barry has now entered a part of his life he has coveted for some time...the period where he does exactly what he

wants, whenever he wants. He recently pulled some of his photography equipment out of storage to renew one of his favorite hobbies...macrophotography. On a sunny day, you may encounter Barry photographing plants, spiders, grasshoppers, bees or dragonflies and damselflies. It will be readily apparent that you have met a very nice person that dedicated his entire career to the protection of Kentucky's natural areas. Thanks for all of your hard work and commitment to our common goal, Barry. On behalf of the Commission's extended family, enjoy your retirement to the fullest!!

Drought

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mussel habitat (mixed sand, gravel and cobble), (2) only one shoreline provided habitat (bedrock dominated the channel, and the other shoreline was comprised of boulders and cobble), and (3) mussels were stranded within a six-foot wide swath of shoreline. By multiplying 26 miles by 5280 feet, dividing the result by 97 feet ($97 \times 6 = 582$ sq. ft.), and multiplying by 238, an estimated 336,831 mussels died in the lower Licking River just before our visit. This estimate probably is low because the assumptions are conservative and mussels died before and after our visit. Imagine the number of mussels that died as a result of the drought in all of our streams!

What is the prognosis for mussels following the drought? Droughts are natural phenomena that aquatic organisms have always endured. However, the impact of recent droughts may be more serious than those of the distant past. Recent droughts impact aquatic systems already stressed by pollution, habitat alteration and destruction, and other changes produced by modern society. These changes have brought mussels to the point where they are the most endangered group of organisms in the United States. Most mussel species will endure, but the drought presents rare species with one more challenge to their continued existence. Fortunately, the drought abated this year. We did not need another drought and neither did the mussels.

New Western Field Office

By Rick Remington

After several moves and years, I have finally settled into the new Western Field Office at Western Kentucky University in Bowling Green. A special thanks goes out to Dr. Michael Stokes of Western's Biology Department and Dr. Martin Houston, former Dean of Ogden College. Both were instrumental in helping to establish the office and providing access to office equipment. My office is located next to Western's Center for Biodiversity Studies in the Thompson Complex Central Wing. Being on campus has numerous advantages, such as the abundance of faculty expertise and the resources of the Biodiversity Center. The university will also benefit through collaborative research efforts and the availability of select preserves to use as outdoor classrooms. The main advantage, of course, is the proximity to our western

preserves. Bowling Green is within one hour of eight nature preserves, and even the far western extremes of the Jackson Purchase are two hours closer than the long drive from Frankfort. This gives me more time on the ground and less time behind the wheel. Contact me at:

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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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