

OZARK SIERRAN

One Earth

One Chance

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Blowin' in the Wind: Springfield City Utilities and Old King Coal

by Cynthia Andre, Ozark Chapter Activist

In the early 1970's, Springfield was a large, albeit still somewhat sleepy, Ozark town, although it had been slowly and steadily growing. Local citizens had just approved the construction of a new coal-fired power plant. With the additional inexpensive power it continued to grow.

In fact, according to City Utilities of Springfield (CU), manager of the city's power plants, the peak use of electricity in Springfield, which occurs during the hot, summer months, doubled during the next 25 years, reaching 605 megawatts (MW) by 1995. By 2000, just five years later, it had reached another milestone in its peak load—706 MW.

Coal-fired generators continue to provide most of Springfield's electricity. On a recent cold, blustery winter morning, a group of local Sierrans viewed CU's stockpile of coal from a catwalk ten floors up on the outside of the main building of Springfield's Southwest Power Plant. Far below was a black sprawling field of many acres piled high with coal. On the leveled top of the mound, two front-end loaders moved about like small robotic creatures, continuously feeding coal into a hopper that connected like a long vacuum hose to the main building.

Mesmerized by this scene, we only belatedly noticed the 120 railroad cars partially surrounding the field. The coal in these cars, a CU staff person explained, had been transported to Springfield from Utah and would be burned in less than one week. In fact, he added, Springfield is now burning one railroad car full of coal per hour.

In spite of this staggering consumption of a finite resource, CU is projecting that it will be unable to meet the growing demand for electricity in Springfield, plus the needed reserve, by 2008. An additional 275 MW baseload unit (capable of running continuously) is needed, CU says, in addition to its current 595 MW baseload capacity. Like many utility companies across the country, CU has been considering its options.

CU says that any recommended solution must do three things:

- Secure reliable energy supplies;
- Keep electricity prices competitive and stable; and
- Responsibly safeguard our natural environment.

From literature CU provided to its consumers, the specific options considered included two coal-burning units, two gas-burning units, and several alternative energy options—wind, microturbines, distributed generation, and fuel cells. Alternative energy options were dismissed as having two main drawbacks—too expensive and/or too little energy generated.

CU then narrowed the options to three—1) a pulverized coal unit (one of the least expensive, most polluting coal-burning units), 2) a combined cycle gas turbine (one of the most expensive, least polluting natural gas-burning units), and 3) purchasing the extra power from the “deregulated wholesale electricity market.”

Arguing that natural gas prices were too volatile and that transmission of wholesale energy over the

grid was too unreliable, CU then settled in December on the first option—coal—clearly prioritizing cost and reliability of the energy supply.

“Safeguarding our natural environment”—the last criteria on CU's list and clearly the last in priority—was dismissed with reassurances that CU will meet all of the Missouri Department of Natural Resources' (MDNR) requirements regarding compliance with the provisions of the Clean Air Act.

Sound reasonable?

Why Springfield citizens should be concerned

Let's begin with the burning of coal. The Environmental Protection Agency has identified 67 separate hazardous compounds and chemicals in the flue gas emitted from power plant smokestacks. Of these, 55 are known neurotoxins or developmental toxins (i.e., they affect the development of a child's brain, nervous system, or body). In addition, 24 are also known, probable, or possible human carcinogens.

Damage to the environment from air pollutants such as nitrogen oxides (NOx) and sulfur dioxide (SO₂) have been well documented for many years. NOx is associated with the development of ozone which can damage plants; both NOx and SO₂ contribute to acid rain which has killed the aquatic wildlife in many streams and lakes in the northeastern United States as well as causing damage to crops, trees, and other plants on which wildlife depends.

In addition these pollutants have been increasingly linked to health risks for humans. Abt Associates, for example, estimates that power plant emissions of sulfur dioxide and nitrogen oxides alone are responsible each year for an estimated 30,100 premature deaths, 20,100 hospitalizations, 603,000 asthmas attacks, and over 5,000,000 lost workdays. Evidence

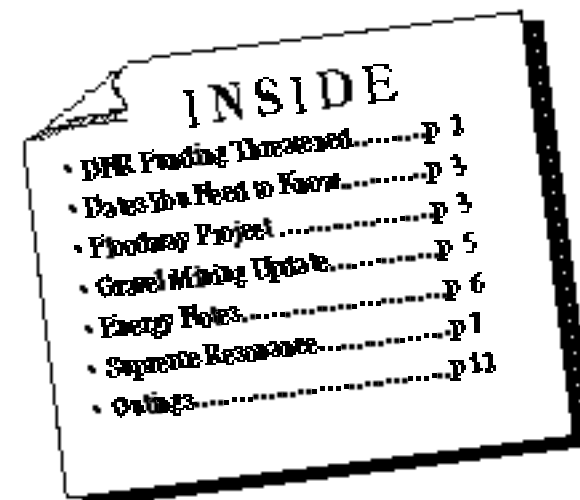
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Proposals Threaten Department of Natural Resources Funding

by Car la Klein, Chapter Director

Missouri is blessed with pure, clean streams and lakes that provide our families with clean drinking water and places to swim, fish and boat. Our state webpage tells us that, "Missouri has 902,000 acres of water, 50,000 miles of rivers and streams and more than 1,100 known springs, including the nation's largest single outlet spring, Big Spring at Van Buren." Missouri's spectacular variety of geology, ecology, and plant species are world renown.

In a state as beautiful and diverse as Missouri where tourism is one of the top three revenue producing industries, and the fastest growing element of the state's economy, does it seem wise or economically prudent to be ranked last on spending for environmental protection?

Missouri was recently ranked number 50 in per capita spending for environmental protection according to Governing magazine's fall issue. During these tough economic times, when nearly every state government is struggling to balance their budget, it may seem understandable, if not justifiable, that these cuts are necessary. We all understand economic downturn and know tough decisions must be made. However, the attack on Missouri's environmental spending began during times of economic prosperity.

The Department of Natural Resources, the agency charged with protecting our states natural resources, has had their general revenue budget cut 75% since 2001, and the Governor has proposed another 33% cut in their remaining general revenue budget this year. This cut is far greater than any other state agency. One might wonder why the Missouri legislature would rank protecting the environment as such a low priority in a state where citizens overwhelmingly rank clean water and clean air as high priority issues.

What might account for this lapse in judgment? Spending a few days attending committee meetings where Missouri's environmental laws are being introduced and debated may help provide some clarity. Watching the parade of industry lobbyists in the halls crafting their wish list may provide some insight. In a matter of weeks the Missouri legislature has introduced bill after bill to weaken environmental laws and place more restraints on the agencies charged with our resource protection.

Some of the most offensive bills this session are anti-environmental bills like HB 215, "no stricter than federal," meant to limit our diverse state's protection to minimum federal standards. In a state that has more caves and springs than any other, minimum federal standards are not adequate. SB 36 takes away citizens right to appeal DNR decisions. In addition SB 36 requires DNR to perform cost-benefit analysis before they can make environmental regulation, but it only allows the monetary cost to businesses to be considered. The Departments are not currently staffed for this function. This legislation would result in already understaffed departments cutting vital services such as field inspections and enforcement.

Essentially these bills are saying that, before any laws can be passed to protect the health of Missouri's citizens and the environment, the DNR must prove beyond a reasonable doubt the harm in each specific case! Imagine if this logic were applied to other state agencies. I suppose that everyone could drive whatever speed they wanted until they caused an accident, at which time the State Highway department would determine what speed limit was appropriate for that individual. So much for being proactive and protecting human health and the environment!

As unreasonable as these bills seem, last Thursday a bill was introduced that truly added insult to injury. The industry representatives lined up again to testify before

the Senate Agriculture, Conservation, Parks and Natural Resources Committee in favor of SB 398, the "Super Commission bill." Industry representatives came to declare not only have they been unfairly regulated by the DNR, but by the volunteer citizens commissions as well.

There are currently six citizens commissions appointed by the Governor and approved by the Senate that serve to provide oversight to the Department of Natural Resources decisions and rules. These volunteer commissioners have served the state of Missouri and its citizens well since 1965.

The Commissioners appointed are highly qualified individuals that have particular expertise on the boards they serve: clean air, clean water, hazardous waste, land reclamation, soil and water, and safe drinking water. These six volunteer commissions currently operate at a cost to the state of approximately \$36,000 per year. The funding pays for staff to investigate the various cases brought before the commissions and for their travel and lodging when they travel to various areas of the state.

SB 398 would abolish the current volunteer citizens commissions and transfer the responsibility, rights, powers, and functions granted to the director of the Department of Natural Resources to this newly established Super Commission. These five individuals are to receive an annual salary of \$95,000 each. Throw in some additional backup staff for the Super Commission and we are looking at a cost of \$1.5 million. Now one might ask where they think this \$1.5 million would come from

during this tight fiscal year. No problem, the bill has a zero fiscal note because they plan to cut this \$1.5 million from the Department of Natural Resources budget. This would require the termination of another 33 state employees that work to monitor and enforce current environmental laws.

SB 398 can only be seen as a power grab by industries that think they can get more of what they want through a politically appointed commission than through the citizen's commissions and the regulatory agencies. This removal of key decision-making from the Department of Natural Resources staff and commissions, where the technical expertise on environmental issues resides, is an extreme and unnecessary change.

It is especially inappropriate to fund this Super Commission by taking funds from an already understaffed department, cutting vital services such as field inspections and enforcement, and concentrating these revenues into the hands of a few highly paid individuals. In a state with such amazing natural resources that depends on much of its revenue from tourism, this is just plain bad environmental and economic policy.

Every Sierran who cares about clean air, clean water, and Missouri's natural beauty should call their legislators and ask them to oppose regulations that further limit state agencies from protecting our health and environment. Let them know that it is unacceptable that protection of Missouri's vital resources is ranked the lowest in the nation. —

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OZARK SIERRAN

The published deadline is the real, honest-to-goodness, drop-dead deadline—not a couple of days or a week later! Submissions received after the deadline are subject to the possibility they won't appear in the issue: you will feel bad and we will feel bad. Call us nasty, but we are determined this newsletter will come out on time!

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THE ST. JOHNS BASIN-NEW MADRID FLOODWAY PROJECT

The Gap that's far from the Mall: Part I — The Project

by Alan Journet, Trail of Tears Group Conservation Chair

Preamble:

The St. Johns Basin–New Madrid Floodway Project of the U.S. Army Corps of Engineers (USA–COE) Memphis District is designed to protect certain agricultural and residential areas of Southeast Missouri from the frequent severe flooding that they currently experience. Although the project promises significant human benefits and is extremely popular in the area, it threatens considerable environmental cost. This two part series will describe the nature of the project (Part I) and then explore environmental and other concerns (Part II).

The Southeast Lowlands

The wettest region in our state is the Southeast Missouri Lowlands. Not only does it receive the highest annual rainfall (some 55 inches), but it also undergoes frequent flooding. This local flooding is a result of headwater and backwater flooding. Headwater flooding is caused by drainage of rainfall from surrounding uplands and the region itself which flows through channels and bayous southwards towards and into the Mississippi River. Backwater flooding, meanwhile, occurs when the seasonally high spring Mississippi River swollen by snowmelt from upstream backs up onto the surrounding floodplain. This combination of events results in frequent spring inundation of these Southeastern lowlands.

Over geological time, the meandering of the Mississippi has shifted through the area with the result that a wide and relatively flat floodplain now exists with abundant low points that form wetlands and swamps and that annually accumulate spring floodwaters.

A History of Wetland Forests

When Spanish explorers passed through the area, and even when European settlers arrived years later, the Southeast Missouri lowlands supported some 2.5 million acres of bottomland hardwood and swamp forest with an occasional slightly higher and dryer zone of bottomland prairie. The value of this area for timber and agriculture was soon realized. Unfortunately, value was not seen in maintaining the natural resources and natural communities. By 1975 only 98,000 acres (4.1%) of the original forest remained, with only about 1% in tracts larger than 1000 acres.

Three hundred and fifty years ago, not only did the area support acres of fine hardwood timber to be harvested, but the soils also were found to be rich and fertile. The main problems confronting settlers were the difficulty of harvesting timber from wetland soils and swamps, and the hazard of farming cleared, sodden soil. As a result, land was rather cheap. However, with the ingenuity of a few landowners, the lowlands were “tamed.”

Unfortunately the mechanism for taming was not benign.

Through the activity of the Little River Drainage District around the turn of the last century, an extensive series of ditches was dug and dredged throughout the region. Instead of the meandering rivers seen elsewhere in the state, the waterways of these Southeast lowlands are long, straight drainage ditches (Figures 1 and 2). The improved drainage of the area led to the rapid removal of most of the hardwood

forest for timber followed by the transformation of the lowlands into agricultural farmland. So successful was and is the drainage program that the Southeast lowlands now offer some of the most fertile and attractive soils in the state, supporting extensive acreages of soybeans, corn, and cotton. Indeed, many farms that were once bottomland hardwood forest and now are inundated during late winter and spring, employ extensive irrigation systems to extract groundwater for their crops.

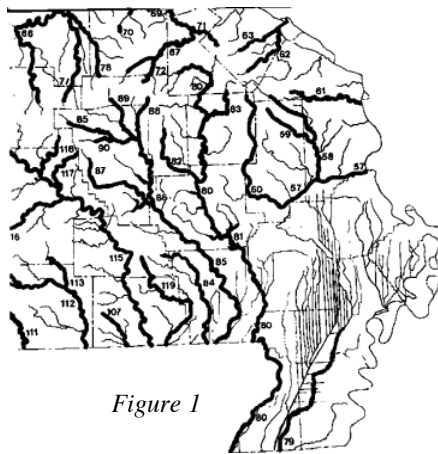
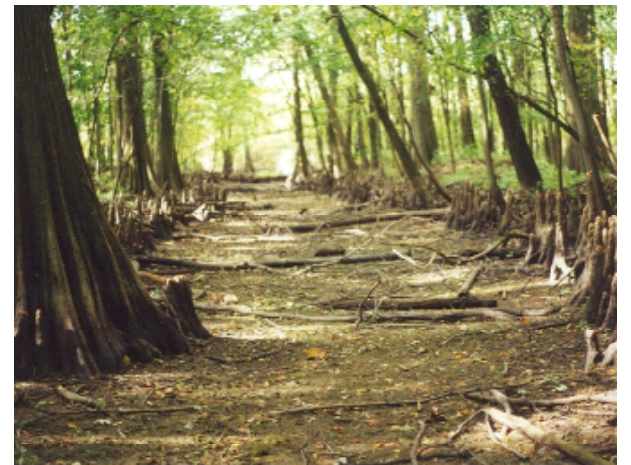


Figure 1

champion trees—surviving here only because so few wetland forest acres remain throughout the southeast states (Figure 3). Evidence suggests that this park is already threatened by effective drainage channels which bring pesticides from surrounding cropland into the park, and take floodwaters out, causing the park to dry out and leading to adjustments in the floral community it supports (Figure 4).



Figure 3 above and Figure 4 below



The Levee System Creates the New Madrid Floodway

The Mississippi River levee system as it presently exists was authorized after the huge flood of 1927 to protect riverfront occupants from the annual spring flooding that ironically was the source and sustenance of the fertile soils on which they depend. In combination with the deforestation of thousands of acres upstream the levee system has promoted rather than reduced spring floodwater severity and frequency. Knowing that the levee system might encourage high floodwaters that could threaten the city of Cairo nestled in the confluence of the Mississippi and Ohio Rivers, the southeastern Missouri lowlands were enclosed in a double levee system (Figure 5). While the main frontline levee was constructed along the west bank of the river from Bird's Point (on the Missouri bank approximately across from Cairo) to New Madrid, a setback levee was constructed to cross the floodplain some miles behind it. This enclosed an area named the New Madrid Floodway which is now separated from the St. Johns Bayou Basin by the aforementioned setback levee.

According to the engineering design, the south end of this Floodway was left with unimpeded access



Figure 2

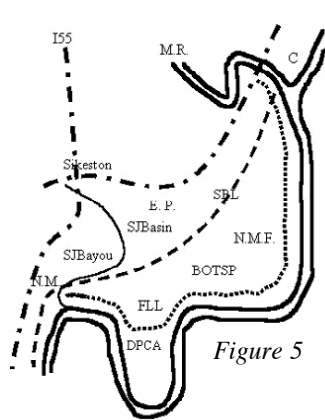
Bottomland forest is now restricted to a few small remnants totaling only a few thousand acres. One such remnant is Big Oak Tree State Park providing a minuscule sanctuary for many local species of flora and fauna, and boasting several state and national

Dates You Need to Know

4/26 Chapter ConsCom meeting: Kansas City, Missouri, contact Johann Hall, johannahall@hotmail.com

4/27 Chapter ExCom meeting: Kansas City, Missouri, contact Keel Kopecky, klopecky@tc.rc.com, (816) 966-9544

St. Johns–New Madrid Project.....continued from page 3 to the river; thus the 1500 ft levee gap was born – not by mistake or shortage of funds, but by design (Figure 6). The engineering scheme was simple:



should Cairo be threatened by rising floodwater, the north (Bird's Point) end of the frontline levee would be blown allowing the river to flow freely across its old floodplain and back out through the gap at New Madrid. Spreading the river over its historic floodplain would lower its

elevation and protect residential Cairo.

As a result of this levee design, farmers purchasing the land knew that they were taking a chance that at some time in the future their potential cropland could be inundated. Inevitably, early 20th century land prices reflected this threat and its associated risks. As a result of the levee gap at New Madrid backwater flooding into the floodway occurs annually with some 17,000 acres in the floodway inundated every two years and some 75,000 acres susceptible to 30+ year floods.



Figure 6

St Johns Basin

In the adjacent St. Johns Bayou Basin, a slightly different problem has developed. Generally, the drainage ditches carrying headwater flooding from the region and surrounding uplands successfully transmit excess surface run-off water into the Mississippi River via the St. Johns Bayou, passing through simple gravity gates in the setback levee just east of New Madrid (Figure 7). Unfortunately for the residents of this area, however, to prevent backwater floods from inundating the St Johns Basin the gates must be closed when the Mississippi River elevation exceeds that of the bayou.

When the gates are manually closed, headwaters no longer able to escape into the Mississippi accumulate behind the gates and along the drainage ditches. As a result, some 10,000 acres are subject to two year floods while 55,000 acres are susceptible to 30+ year floods. Under extreme conditions, East Prairie can be inundated or cut-off from surrounding areas.

Residents Seek a Remedy—A Project is Born

Confronted with the flood problems, the generally

economically disadvantaged residents of Southeast Missouri have long sought a solution to their plight. Promise was provided by the 1954 Flood Control Act (part of the Mississippi River levee feature of the Mississippi River and Tributaries Project) which authorized closure of the 1500 foot levee gap. Unfortunately for local residents, however, the funding conditions of the authorization demanded a significant local cost share contribution which the community could not afford.

Subsequently, based on General Design Memoranda from the Chief of Engineers (USA-COE) and prepared in response to the Water Resources Development Act of 1976, the Water Resources Development Act of 1986 authorized remedies for the two areas. These became the St. Johns Basin and New Madrid Floodway projects. Though composed of two distinct elements, these have been rolled into one major project known by the joint title. This authorization also, however, contained a significant local non-Federal cost share requirement.

The project also receives support because it is argued to serve the national objective as defined by the Water Resources Council's Economic and Environmental Principles for Water and Related Land Resources Implementation Studies. This identifies beneficial projects as those that "contribute to national economic development consistent with protecting the nation's environment..." A project can contribute to this National Economic Development (NED) objective by increasing the net value of the nation's output of goods and services.

Federal Funds Become Local Cost-Share

In the early 1990s, President Bill Clinton was seeking mechanisms to promote local economic development. East Prairie was lucky enough to receive designation as an Economic Community, meaning it was eligible for significant financial assistance. The community selected the combined flood control project as the most important development it needed to promote local economic growth and enhance quality of life.



Figure 7

As a result of exceptions that were then incorporated into the Water Resources Development Act of 1996, the U.S. Department of Agriculture was permitted to contribute funds to the community that offset the local cost-share requirement and thus enabled the local requirement to be met and the project to go forward. As a result of this waiver, approved in Congress because it was promoted by 8th Congressional District Representative Jo Ann

Emerson in her early years in Washington, federal funds were allowed to become the local cost-share component for the federally-funded Corps of Engineers project.

Project Analyses

The U.S. Army Corps of Engineers then developed a Supplemental Environmental Impact Statement released in April 1999. Displaying the convoluted history of the project, this 1999 statement was designated as a supplement to the 1982 Supplemental Impact Statement of the 1976 Final Environmental Impact Statement.

After public comment, this was followed in October 2001 by the USA-COE Draft Report of the Revised Supplemental Environmental Impact Statement for the St. Johns Basin–New Madrid Floodway Project. Although this document contained an Appendix purporting to present public comments on the project, it actually comprised mainly letters from local folks, representatives, and organizations supporting the project; letters and lengthy submissions by opponents were omitted. This consequently presented a biased view of how the project was being received in the greater state and regional area.

Following further public comment, the final document was the June 2002 Final Report of Revised Supplemental Environmental Impact Statement, containing some modifications, clarifications, and expansions from the draft version and including a designation of the preferred alternative from amongst those described and evaluated.

This project required water quality certification by the Missouri State Department of Natural Resources. When this was refused, the Corps elected to appeal the DNR decision to the Missouri Clean Water Commission, which has the power to overturn the DNR decision. The Environmental Defense Fund, which has long had an interest in the project, and wrote a lengthy critique of the 1999 DSEIS, has elected to file as a Defendant Intervener in this appeal to support the state DNR. The Ozark Chapter of the Sierra Club, meanwhile, has voted to join EDF in this intervention in support of the state DNR.

The Environmental Impact Statements delineate the essential elements of the combined project as outlined below.

New Madrid Floodway Component.

The main aspect of this, as discussed above, is closure of the 1500 foot engineered gap in the levee system just east of New Madrid where the frontline levee approaches the setback levee (Figure 8). Closure will include a gravity gate and a 1500 ft³/second pumping station that will pump accumulated headwater ponding out of the floodway into the swollen Mississippi River when river elevation requires gate closure.

St Johns Basin Component

The main element of this project is the installation of a 1000 ft³/second pumping station east of the current gravity gate. This pumping station will be activated when the Mississippi River elevation exceeds that of the St. Johns Bayou requiring closure of the gravity gate. It will serve to pump headwater flooding accumulating behind the closed gate over the levee and into the Mississippi River channel.

An additional element of this component involves the dredging and widening of some of the lower

Sand and Gravel Mining Update

by Cynthia Andre, Ozark Chapter Activist

In the fall of 2002, facing strong resistance from the sand and gravel mining industry, the Land Reclamation Commission was once more stalled in their three-year attempt to establish regulations for the industry. At the recommendation of the staff of the Land Reclamation Program of the Missouri Department of Natural Resources (DNR), which is overseen by the Commission, a workgroup was formed. Workgroup participants, invited by the Reclamation staff, were charged with the task of negotiating a set of regulations that would be acceptable to the industry.

The mining of sand and gravel in and beside streams in Missouri contributes annually to the loss of many acres of fertile streamside land upstream and downstream of mining sites, destroying the wildlife habitats in and beside the streams. As consolidating gravel bars with maturing trees are scraped bare and destabilized by mining, increased sediment is introduced into the streams; filling in small areas in the cobble where the macroinvertebrates on which fish feed live; smothering fish fry; and interfering with the feeding and mating of aquatic wildlife. Both widening of the streams and the loss of riparian vegetation from mining raise water temperatures which drives out native species.

Representatives of the Sierra Club met with the workgroup four times during late fall and early winter. Other participants included representatives of the

industry, representatives of county commissions that use gravel for road construction and repairs, and private landowners who lease their land to miners or mine themselves. Negotiations continued for four long days, during which many of the participants continued to protest any regulation of the industry. In the end, we agreed to disagree and voted on all the regulations proposed by each side.

If this sounds reasonable and fair, recall that the devil is in the details. The workgroup included at least six mining operators (representing about 200 operators statewide), three representatives of two county commissions and three representatives of "property rights," i.e. the right of landowners to do whatever they want to with their own land. Each of these individuals was allowed one vote, therefore a total of several per faction. By contrast, there was only one representative present for each of the environmental organizations, and, although representing thousands of Missouri citizens each, these were also allowed only one vote.

All regulations receiving any votes were passed onto the Commission, but an explanation of the voting process was not.

Still the Commission delayed action, setting still another date for more hearings, until Senator Steelman, chair of the Missouri Senate Commerce and Environment Committee, who had attended one of the workgroup meetings and questioned DNR's right to regulate the gravel mining industry, intro-

duced Senate Bill 360.

SB360, dubbed the "Ruined Rivers Bill" by Missouri environmentalists, exempts all sand and gravel mining operators in Missouri, including private landowners who commercially mine gravel on their own land, from any oversight or regulation, with the exception of only the largest operations (removing more than 5000 tons per year).

It now appears that 75% of all mining of sand and gravel in Missouri will be exempt from any regulation. The Commission, after three years of stalling, is scheduled to vote on the proposed regulations on March 26.

ACTION: Members are urged to write to the Land Reclamation Commission in support of the sand and gravel mining regulations proposed by the environmental and fisheries groups participating in the Land Reclamation workgroups. Send letters to:
Land Reclamation Commission,
Department of Natural Resources,
P.O. Box 176,
Jefferson City, MO 65102.

If you live in Senator Steelman's district, please contact her to voice your opposition to SB 360 or any amendment she might attach to other bills that would allow any miners on our streams without regulation. If you are not sure you are in her district go to <http://www.senate.state.mo.us/zipsrch.htm>. —

The Road to Ruin: Bush's Plan for Public Lands?

by Caroline Pufalt, Ozark Chapter Activist

Many readers of the Ozark Sierran will remember our campaign to get Missourians to comment on the Forest Service Roadless Area Conservation Rule late in the Clinton administration. So many Missourians and other citizens wrote supporting that initiative that the comments were overwhelmingly in favor of roadless area protection. But as we know, President Bush has never let the voice of the people get in his way. Thus, when Bush was just barely "in office" on January 20, 2001, his administration delayed implementation of the rule which would have banned road building and most logging in identified roadless areas. Legal challenges have temporarily reinstated the ban but the Administration's lack of support for the ban, and other rule-making changes the Bush administration is pursuing, place those roadless areas at risk.

Unfortunately, the Administration is doing more to increase roads and motorized traffic on our public lands. The Clinton administration initiated a process to reduce and eventually ban snowmobile recreation in Yellowstone and Grand Teton National Park. But, again, the Bush administration took action in November 2002 to terminate that effort. Instead it introduced a "compromise" which reduced the number of snowmobiles in the parks on traditionally busiest days. But that "compromise" actually increases the number of snowmobiles permitted in the parks overall.

Many roads on Forest Service land are connected with logging. The Bush administration has announced plans to exempt millions of acres of

National Forest land from environmental review in order to speed up logging projects under the guise of reducing fire risks. Much of that logging will involve the creation of new roads or the opening up of roads that would get little use otherwise.

Another Bush administration action that could lead to increased roads on public lands was unveiled on Christmas Eve 2002. That regarded a new rule involving rights-of-way on public lands. The rule applies to claims filed under Revised Statute 2477 of the Lode Mining Act of 1866. This antiquated rule would allow states to claim rights of way on old abandoned roads and paths, claiming that they were historic rights-of-way. The Bush approach paves the way for some of these unresolved claims to be honored, regardless of whether the right-of-way is through a National Park, federally designated wilderness, or sensitive habitat. Utah, Alaska, and California are the states most likely to be effected by this outrageous loophole.

If you want to know more about why we should care about roads on our public lands, a recently released book entitled *No Place Distant* (Island Press) by David Havlick does an excellent job of summarizing those concerns. Mr. Havlick lives in Montana and is described as a "roads scholar" for the Predator Conservation Alliance. He has certainly done his research well.

In addition to describing the ecological effects of roads, Mr. Havlick looks at the history of roads on public lands; their role in opening up those lands and then also degrading them.

He examines the politics and finances behind the

funding and promotion of public lands roads.

No Place Distant is readable and relevant and full of too much valuable information to do more than just summarize here. First a few amazing statistics. There are 550,000 miles of official roads on public lands and another 200,000 miles of unclassified roads. Compare that to the interstate highway system of only 43,000 miles.

What are all those roads for and why are they there? Most are remnants of logging roads, while others are well traveled paved roads. Paved or unpaved, well traveled or remote, these roads have an ecological impact. Havlick describes these impacts in two general categories: those impacts arising from the use of roads and those arising from their mere existence—which he calls presence effects. Obvious use effects are road kill, access for hunting and poaching, access for other recreational uses, and extractive industries. Other effects are increased distribution of alien species and a higher risk of fire. Some effects such as erosion and runoff are both use and presence effects. Even without use, roads provide a corridor for invasive species and as a barrier for native species. Traffic, of course, causes noise and air pollution. Havlick describes the increase in motorized recreation that both builds on existing roads and promotes additional ones.

Our public lands are precious and popular places. All uses introduce some impacts. How we enjoy those lands and protect the natural habitat and process on those lands is a major challenge. Mr. Havlick's book is an excellent source for understanding how roads fit into that puzzle. —

Energy Notes

by Wallace McMullen, Energy Subcommittee Chair

Springfield To Vote On New Coal Burning Power Plant

The Springfield City Council has voted to hold a bond referendum for the purpose of building a new coal-fired electric power plant. The vote will be held in August. The Sierra Club has gone on record against this proposal, arguing that nothing has been done to employ renewable energy, and almost nothing in the way of improving efficiency by the utility. Cynthia Andre has been leading the environmental effort in the area. (See related story, *Blowin' in the Wind*, by Cynthia Andre, in this issue of the Ozark Sierran.)

Peabody Coal Mounts Legal Attack on Sierra Challenge to New Power Plant

St. Louis based Peabody Coal (a.k.a. Peabody Energy) has received a permit to build a large new power plant that is expected to adversely affect the air quality in Mammoth Cave National Park. The proposed facility is called the Thoroughbred Generating Station. The Sierra Club, among others, has filed a lawsuit challenging the permitting decision.

Peabody has intervened in the permit case. They are using the legal process to depose several Sierra activists, including the Kentucky Chapter's conservation chair, vice-chair, and Louisville Group vice-chair. Being deposed is a multi-hour experience during which the opposing attorneys ask about everything they can think of that might discredit you. It can be fairly unpleasant. Peabody's attorneys also subpoenaed email records and personal calendar for the past six months from Hilary Hopper, the conservation chair.

Frequent users of Mammoth Cave Park consider the park to already have a serious smog problem. The Thoroughbred plant would only exacerbate this problem. The emissions of mercury will also impact water quality above and below ground in the area.

Because this is a St. Louis firm proposing a pollution problem in Kentucky and threatening a National Park, the Sierra Club's Midwest Regional Conservation Committee is assisting the effort to oppose Thoroughbred.

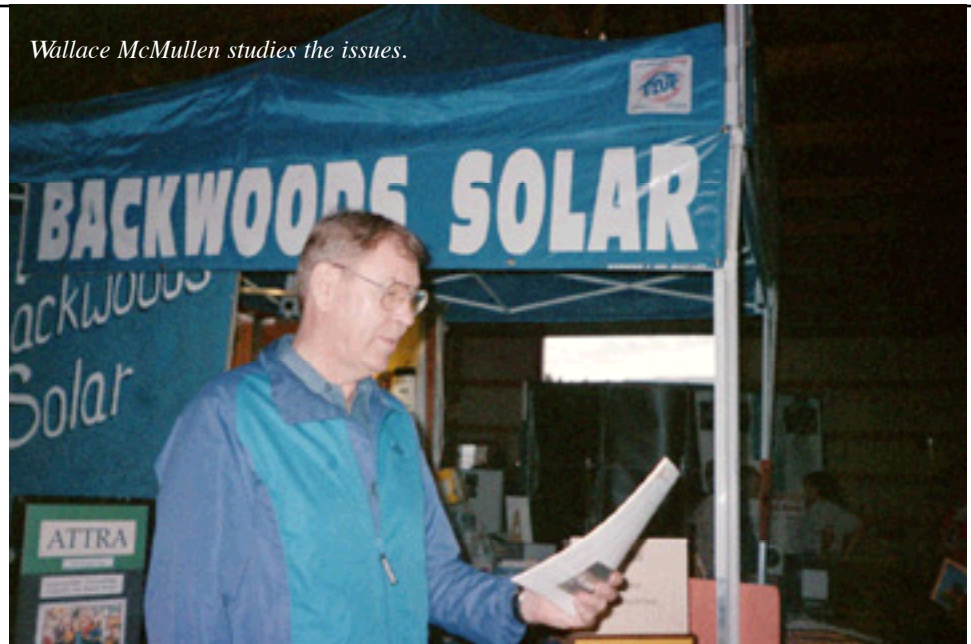
MRCC Will Hold a Mini-Conference on Air Pollution From Coal-Burning Power Plants

On April 5 in Louisville the MRCC will tour a coal-fired power plant with emissions controls (scrubbers and electrostatic precipitation), and bring together Midwest activists on energy issues with several noted experts.

New Evangelistic Center Will Seek Referendum on Renewable Energy Law

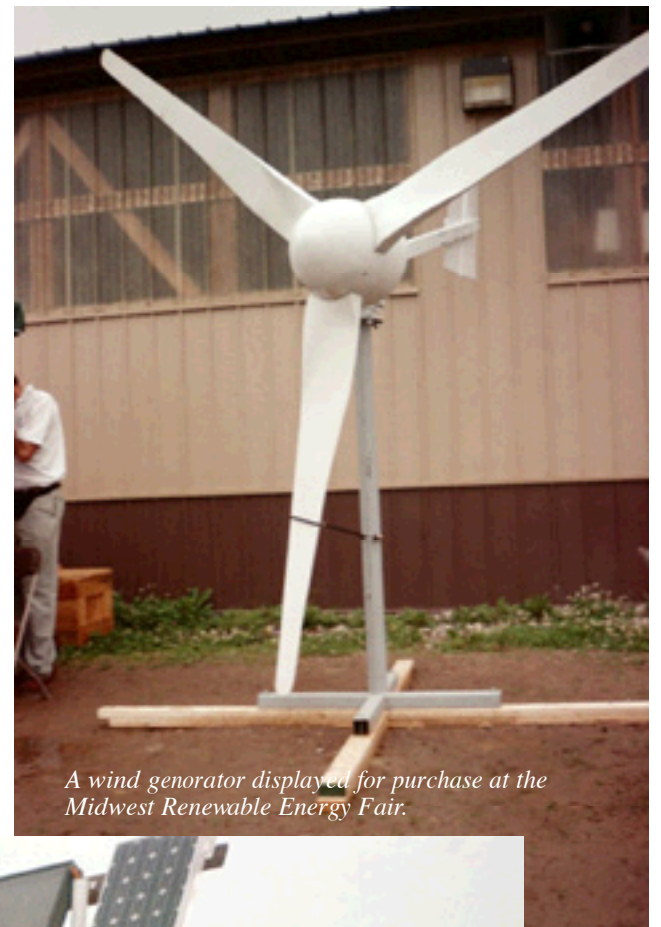
Reverend Larry Rice's New Evangelist Center, which is based in St. Louis, Springfield, and New Bloomfield, will circulate an initiative petition for a referendum on Missouri's "Net Metering" law. This is the law which sets the rules for a homeowner to experiment with renewable energy while remaining connected to the main electricity grid. The present law provides a number of disincentives that may be very expensive for a homeowner wishing to try renewable energy while remaining connected. Rev. Rice's petition would create a more favorable situation for the small-scale use of renewable energy. Their petition language has been approved by the Secretary of State for circulation to voters. —

Wallace McMullen studies the issues.



Sierrans Attend the Midwest Renewable Energy Fair

The Midwest Renewable Energy Fair is held every year on the weekend of the summer solstice. A number of Ozark Chapter members attended this event last year, including Jim Young, (St. Louis), Darla Dugan (Kansas City), and Wallace McMullen (Jefferson City). The Fair draws up to 10,000 people each year and is held in Amherst, Wisconsin. More information about this year's fair can be found at www.mrea.org.



A wind generator displayed for purchase at the Midwest Renewable Energy Fair.



Sierrans Joan Lindop and Wallace McMullen near solar collectors.

Supreme Resonance

by Tom Kruzen, Mining Subcommittee Chair

On the great rotunda of Missouri's capitol building is written, "Salus populi suprema lex esto"... Let the Welfare of the People Be the Supreme Law. I recited our state motto to Dora Santana and Esther Hinestrosa in my broken Spanish. The nurses had come 5,000 miles from Doe Run's Peruvian smelter in the Andes Mountain town of La Oroya. Our eyes met and I knew they understood. On a sunny Sunday in Crystal City at the Presbyterian Church, these brave women had come to meet and share experiences with residents from Doe Run's other smelter town in Herculanum, Missouri. Our common bond was a company that has poisoned people and laid waste to the natural world in two vastly different, yet chillingly similar communities.

The Giddings-Lovejoy Presbytery, Herculanum Environmental Lead Pollution Patrol, People At Risk, and the Ozark Chapter of the Sierra Club helped sponsor the trip and the afternoon in Missouri. While helping to release the Sierra Club's report on Superfund failings, *Leaving Our Communities at Risk* in September 2002, I had met the Reverend Elinor Stock, a St. Louis minister who helps coordinate *Joining Hands Against Hunger (JHAH)*. At the Arch with news cameras rolling, Elinor described how, at that very moment, there were 450 activists marching

against the Doe Run Company in La Oroya, Peru. My hair stood on end. Elinor Stock and those of us at the Arch had struck a resonant chord.

Everything the La Oroyans were experiencing at the hand of Doe Run had been experienced by people in Herculanum and eastern Missouri. Herculanum is smaller, with 2,800 people to La Oroyas 50,000—however the tale of misery and woe is the same. Aching bones and joints, Diminished IQs, failing kidneys, tumors and other cancers...and people die. The physical effects of lead, and the carcinogens cadmium and arsenic, along with other toxins such as sulfur dioxide are the same for Peruvians as for Missourians.

In the U.S., with our cleaner air, cleaner water, and other environmental laws, some improvement has begrudgingly been made in lead remediation. Doe Run has a history of seldom doing the right thing and less seldom doing so voluntarily. Only after Doe Run shenanigans were aired in the press by citizen activists in Herculanum, did the company begin to clean up their toxic messes. Full agreement was realized in the Crystal City church this Sunday afternoon (despite language differences) that Doe Run should not mine or smelt ore at the expense of children's health. In Peru, Doe Run has made a sweet-heart deal with the government to delay desperately-needed anti-pollution gear until 2007.

Dora and Esther described thousands of La Oroyan children who suffer from abnormally high levels of blood lead and the attending symptoms. Children in La Oroya are born with 15 micrograms/deciliter of lead. Many have an average of 32-40 $\mu\text{g}/\text{dl}$. The U.S. limit for children is 10 $\mu\text{g}/\text{dl}$. Many of these children need immediate medical help, but, in the poor Andean town, little help is available.

The nurses eyes met and their hands joined with the citizens from Herculanum and around Missouri who came together that winter day. All who know the effects of lead instantly understood the Peruvians' pain, about their government's shortcomings, and about the deceptions played by a company only interested in its bottom line.

In February, the Sierra Club, along with other environmental and labor groups, released a report: *The International Right to Know: Empowering Communities Through Corporate Transparency*. Doe Run and its failings in La Oroya are highlighted in the report. The Peruvian nurses and the citizens of Herculanum know that to make Missouri's motto a reality for both communities, they will work together...against apathy, corporate greed, government collusion and corruption, and the heavy history of lead. Supreme resonance had been achieved. Neither community will suffer isolated and alone. There was a great joining of hands! —

Earth Share of Missouri – An Easy Way for People to Support a Full Spectrum of Environmental Programs

Earth Share of Missouri (ESMo) had raised more than \$518,000 for a wide range of positive environmental programs as of December 2002. More than \$130,000 has already been pledged for 2003. These funds were donated by individuals in all sorts of workplaces, from employees in the State of Missouri Federal agencies, City of St. Louis, City of Kansas City, Bass Pro Shops, American Airlines, BNIM Architects, Worldspan, UnitedHealth Group, and many others. We wish to thank these employers and their generous employees for supporting a variety of programs that are working to care for the world around all of us.

To date, ESMo has raised more than \$13,860 for

The Ozark Chapter's account at the Sierra Club Foundation. The first payments were made in late 1996, and have steadily increased to more than \$4,000 in 2002.

Founded by thirteen local environmental organizations in 1993 as the Missouri Environmental Fund, the federation's name was changed to Earth Share of Missouri in September 2001. The federation now represents 29 regional plus 43 national and international organizations in Missouri-based workplace giving campaigns. In addition to The Sierra Club Foundation, the organization now represents familiar names such as The Nature Conservancy, World Wildlife Fund, Missouri Botanical Garden, and the

World Bird Sanctuary. The federation enables employees to make a single donation that will benefit the full spectrum of environmental causes, addressing issues from protecting the Mississippi and Amazon rivers to Missouri prairies and Brazilian rainforests.

For more information on Earth Share of Missouri, its member organizations, or how you can set up or improve a payroll deduction campaign at your workplace, call Jerry Klamon at (314) 771-6668 or (866) 663-2784 toll free in Missouri. Or e-mail info@earthsharemo.org or visit www.earthsharemo.org.

Sierra Club co-sponsors Lobby Day in Jefferson City on April 23

The Day after Earth Day like minded citizens will hit the halls of the Capitol to let their legislators and the Governor know how important protection of Missouri's natural resources are. Come join friends and make new ones in this important event. Please call the Sierra Club office at 1(800)628-5333 or drop us a line at Carla.Klein@sierraclub.org to let us know if you are interested in attending and we will contact you as more information becomes available.

St. Johns–New Madrid Project.....continued from page 4 bayou and major drainage ditch channels to enhance flow of headwaters from agricultural areas and residential communities southwards into the Mississippi River.

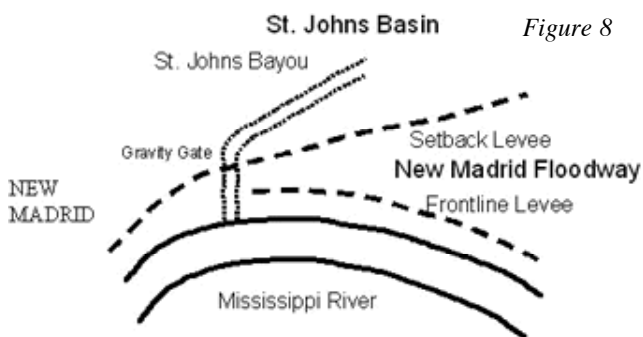


Figure 8

The Alternatives

During deliberations, the USACE considered nine alternatives as follows:

Alternative 1 – Without Project was required for considerations since against this all projects are measured.

Alternative 2 – The Authorized Project as described above with an annual benefit-to-cost ratio above 1.

Alternative 3 – The Avoid and Minimize Project is basically Alternative 2 with modification to reduce environmental impact (to be discussed in Part II of this series). This option also included consideration of three alternative levee closure locations:

• The 1500 foot levee closure at the current gap (approximately at levee mile 34.5) incorporating

a gravity gate allowing variable river connectivity at the south end of the New Madrid Floodway, and pumping station to pump water out when the gates are closed. This is the Preferred Plan with an initial cost of \$80.3 million (including construction and mitigation) and an annual benefit-to-cost ratio of 1.2. Annual benefits are estimated at \$772,000 for the St. Johns Basin element and \$113,000 for the New Madrid Floodway element, for a total overall benefit of \$885,000. Benefits are derived largely from flood damage reduction, agricultural intensification, and urban and commercial improvements. It is noteworthy that the project designed to enhance agricultural profitability has a greater benefit by a factor of seven times in the St. Johns Basin where fewer acres are inundated, than in the New Madrid Floodway where more acres are flooded.

• A 6,500 foot levee further upstream at levee mile 34.

• An 18,500 foot levee even further upstream at levee mile 33.

Since option 3 became the preferred option, the remaining two levee locations were rejected.

Alternative 4 – The East Prairie Ring Levee and St. James Ditch option would involve a levee to protect virtually the entire community of East Prairie from the 25-year flood cycle. Although the industrial park and some areas would achieve 100-year external flood protection, because agricultural areas remain unprotected (a major goal of the endeavor), the benefit-to-cost ratio for this is computed to be below 0.5 and the alternative was rejected. This project, however, would avoid all environmental costs. Curiously, however, it was noted that flooding

more severe than the ten-year event exceed the capacity of the city’s culverts, and the industrial park is flooded. It is also noted that the project does not address this critical issue—so presumably East Prairie will continue to suffer floods even with the project.

Alternative 5 – The St. Johns Bayou Basin Only option would exclude all modifications to the New Madrid Floodway and focus on St Johns Basin. Though economically viable in benefit-to-cost ratio terms, this project was rejected since it fails to address the issue of protecting agricultural land in the New Madrid Floodway and local residents opposed it.

Alternative 6 – The Wildlife Refuge option involved the purchase of the lower portions of both the St. Johns Basin and New Madrid Floodway for creation of a wildlife refuge in which high quality wildlife and fishery habitat would be created. Since the local community disapproved of this option, it was rejected on the grounds that landowners would be unlikely to make the necessary land available for purchase.

Alternative 7 – New Floodway Levee Location option included a series of alternative levee closure locations beyond those identified in Alternative 3 (above):

• A levee northeast of Big Oak Tree State Park was rejected because it would probably generate headwater flooding problems on land not now generally flooded.

• A 15,840 foot levee at mile 32 provided a benefit-cost ratio of 0.6 (listed incorrectly in the statement as a cost-benefit ratio) since agricultural land would be lost. This alternative received no local support.

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€A 15,000 foot levee at mile 27/28 provided a benefit-cost ratio of just 0.3 (listed incorrectly in the statement as a cost-benefit ratio) since significant agricultural land would be lost even though mitigation needs would be reduced markedly. This alternative received no local support either.

Alternative 8 – The Silvicultural option would have converted the flooded area in the Basin and Floodway to forest through such efforts as the Wetland Reserve Program which offers incentives for such conversions. However, since this conservation program has long been available and landowners have not used it, this option was considered unworkable.

Alternative 9 – The Non-structural option would have included floodplain evacuation and relocation of residents, flood-proofing buildings, restrictions on future development, conservation and flood easements, and conversion of agricultural land to uses not damaged by repeated flooding. For various reasons associated with impracticability and ineffectiveness, this option was not further considered.

It is worth noting that the St. Johns Basin Only option, preferred by Missouri's Department of Conservation, has a positive benefit-cost ratio, avoids many environmental costs, and affords 7/8ths of the economic benefit of the entire project. It is surpris-

ing, therefore, that the Corps did not pursue further an option that would combine this alternative with ring levees protecting the residential communities in the New Madrid Floodway. Furthermore, it also seems that an alternative focusing on the St. Johns Basin Only option combined with non-structural solutions in the New Madrid Floodway such as buy-outs and/or a wildlife refuge creation would also have been worth pursuing.

Benefits and Costs

The major human benefits of the combined project will be in the enhancement of agricultural opportunities and profits as the floodwaters will inundate less frequently and less extensively the farmland of both the New Madrid Floodway (reduced backwater flooding) and the St. Johns Bayou Basin (reduced headwater flooding). Additionally, the residents of the affected area hope to benefit directly from decreased residential and commercial flood frequency and severity. This is the hope not only of residents of East Prairie, on the St. Johns Basin side of the setback levee, but also of residents of other small communities, such as Pinhook, located on the river side of the setback levee in a frequently flooded wetland zone of the floodway. Pinhook, incidentally, a small community of some 20–30 homes, is one of the residential areas of Southeast Missouri historically occupied by African American residents.

Although the project holds promise of consider-

able benefits for the human residents of the area, some of these may represent exaggerated claims of benefits and underestimated claims of costs. Meanwhile, the project poses a threat to the non-human residents and the largely wetland communities they inhabit. Recall that what was once 2.5 million acres of wetland forest has already been reduced to just a few thousand acres, and these remnant patches are all very small and separate; two features of habitat fragmentation which make it a particularly serious threat to wildlife. It is for this reason that many of Missouri's species of conservation concern are Southeast Missouri wetland inhabitants. Another concern is the threat to mussel populations inhabiting the channels. Additionally, there is a threat to the critical connectivity between wetland and river which allows the flooded areas to serve as nurseries for many Mississippi River fish species.

The fundamental and difficult questions surrounding the project concern whether the potential human benefits outweigh the potential financial (= federal taxpayer) and environmental costs. With this equation in mind, we should ask whether the preferred project represents the best compromise and also whether it incorporates and accounts accurately for all the appropriate environmental safeguards that such a project reasonably would be expected to include.

Part Two will explore these questions. —



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Springfield City Utilities.....continued from page 1
from studies by researchers at the Harvard School of public health indicates that people living in a 30-mile radius of certain large, utility company smokestacks have a 3–4 times greater chance of dying from respiratory illnesses than those living outside that area.

In addition to our elderly, children are particularly susceptible to air pollution. They, more often than adults, engage in outdoor physical activity, have a larger ratio of lung to body size, and their lungs are still developing. Recent research has indicated that children's lung capacity increases when they move away from heavily polluted, industrialized areas, and that children may have a much higher risk than adults of developing cancer from exposure to certain chemical pollutants.

Nitrogen oxides and sulfur dioxide are only two of the many toxins released by the burning of coal, however, and, of this long list, the Clean Air Act (CAA) controls only six. It does not, for example, control the emission of carbon dioxide, one of the main contributors to global warming, that threatens to cause the extinction of many species of plants and animals if the climate changes too rapidly for adaptation.

Nor does the CAA control the emission of mercury, which once released persists for a very long time in the environment, often entering the food web when it is converted to methyl mercury. Children are exposed both by eating foods contaminated with mercury (such as largemouth bass >12" in Missouri) or as fetuses in utero. The Environmental Protection Agency (EPA) found that 8% of women of childbearing years in the United States already have unsafe levels of mercury in their bodies, putting the number of babies at risk over 300,000. Evidence is increasing that exposure to high mercury levels can cause mental retardation and other neurological problems in young children.

It is evident in reviewing just a few of the many pollutants, such as mercury and carbon dioxide, that simply meeting the requirements of MDNR, the state agency responsible for the compliance of power plants in Missouri with the provisions of the CAA, offers little protection for "our natural environment," i.e., our air, our water, and subsequently any life dependent on clean water and clean air—human, plant, and wildlife.

Unfortunately, it is not just the burning of coal that is of concern. The extraction, purification and transportation of coal are also degrading to the environment and to the health of the people and wildlife living in those areas. Even the residue from coal burning, which contains concentrated levels of numerous contaminants—arsenic, mercury, lead, chromium and cadmium, and radioactive elements, for example—presents health and environmental risks. Quoting the Clean Air Task Force, "It is clear from current disposal practices, however, that state rules are inadequate to control or mitigate the public health and environmental risks of coal combustion waste disposal."

Coal is cheap only because private individuals and the general public pay the health and environmental costs of burning coal. If utility companies had to compensate people for these losses, the cost of coal would be prohibitive.

What Are the Alternatives?

Although CU initially considered several forms of

clean, renewable alternative energy sources, not everyone agrees with CU's assessment. In addition, at least two alternative options were overlooked altogether—biomass and landfill gas.

The Union of Concerned Scientists (UCS) and the Missouri Public Interest Research Group indicate that Missouri has the potential to produce more electricity from clean energy sources—wind, clean biomass (e.g. switchgrass), solar and landfill gas—than it currently generates using polluting technologies.

Windpower technology is rapidly improving and windpower has already become cost competitive in some areas. Wind mapping on a small enough scale to effectively identify areas sufficient to support a utility sized project will not begin in Missouri until later this year and will take approximately one year to complete. Recent remapping of Illinois identified several such areas that older mapping techniques had missed.

Research in the use of native switchgrass in Iowa to burn with coal to reduce pollution, keep revenue in the state, and support family farms is progressing well but is not complete. The use of this and other clean biomass technologies and leasing of land for wind farms would mean millions of dollars in new income for farmers and rural communities.

Likewise, research in photovoltaic technology utilizing solar energy is rapidly progressing, bringing prices down and paving the way for energy storage without the use of batteries. Sacramento, California is an example of a town that is already successfully using this technology to significantly reduce their use of coal.

Clean, renewable energy not only eliminates the health and environmental risks associated with burning coal, but a switch to renewable energy would give a much needed boost to our sagging economy in Missouri. The Union of Concerned Scientists (UCS) points out that Missouri imports virtually all of its coal, nuclear fuel, and natural gas from out of state, exporting millions of dollars and many jobs in the process.

By using wind power to replace only 20% of its energy needs by 2020, UCS indicates that Missouri would experience \$1.6 billion in new capital investment, \$62 million in new property tax revenues, and \$4 million in lease payments to rural Missourians.

If CU builds a 275 MW coal-fired unit, it will lack the flexibility to take advantage of these clean, renewable energy technologies as they become available. Springfield will, instead, be committed for years to the use of coal and the loss of millions of dollars each year in revenue to the area.

An important option that could be exercised today and that would permit CU to maintain its flexibility—reducing the demand for electricity—was also missing from the options considered by CU. Energy conservation is a simpler, far less costly and much cleaner solution than the one offered by CU. Many utility companies, arriving at the same conclusion, have successfully lowered customer demand by offering incentives to customers to reduce their use of electricity.

CU's only incentive program currently is a voluntary curtailment by its largest energy users during periods of peak demand. But to participate in this program, industries must stop all use of electricity when requested. No industry to date has been able to agree to this, as their ongoing operating expenses

continue while they are offline. CU needs to redesign this program, so that it will work for industries.

There are also a number of other effective ways to encourage conservation of energy, which are already in use by other utility companies, such as Columbia Water & Light in Columbia, Missouri. For example, peak loads could be reduced by the voluntary installation of a radio-transmitted device on air conditioning units for which consumers would receive a rate reduction. The devices would allow CU to shut down the compressors for short periods of each hour during peak demands which would hardly be noticeable to the average homeowner.

CU does offer energy audits for homes or businesses with suggestions for improving energy efficiency, but residential customers and businesses have underutilized this resource as, unlike Columbia W&L, there is a sizable fee and no rate relief for or help with the costs of following the recommendations made.

Along these same lines, rebates or low-interest loans could be offered to consumers to encourage the purchase of energy-efficient appliances and appliances with timers that allow use during non-peak demand periods.

However, if CU builds the unit they are currently proposing, the \$660,000,000 indebtedness incurred to fund the unit will preclude any use of funds for promoting the conservation of energy. It is more likely, in fact, that CU will actually be motivated to generate and sell excess energy to reduce their indebtedness. Springfieldians will then be forced to tolerate higher levels of air pollution in order to generate electricity for people living outside the area.

In this event, the reduction in emissions touted by CU resulting from the retirement of their older, more polluting units following the startup of the new plant will be short-lived—if it ever occurs. In any event, with no incentives for conservation, demand will soon catch up with capacity and CU will be running all units—new and old—resulting in a significant increase in emissions.

Not giving consumers an option to conserve energy unnecessarily limits them to the option of utility plant expansion with increased rates and increased pollution of their air and water.

Take action

All Sierra Club members are encouraged to oppose the construction of any new coal-fired units in Missouri. Members in the Springfield area are encouraged to vote against the funding for this proposal when it comes up on the local ballot in August. In summary:

- Coal is not the cheapest fuel when health and environmental costs are considered.
- A new coal-fired plant will continue the revenue drain on the local economy.
- A new coal-fired plant will prevent an early conversion to clean renewable energy.
- A new coal-fired plant is unnecessary, if simple proven methods are put in place to encourage conservation.

Members in the Springfield area can find more information about this issue and how they might participate in opposing CU's proposal on the Chapter website (www.missouri.sierraclub.org) under "Outings and Local Groups/White River Group." —

Outings Continued

Jun 1 (Sun) Canoe trip on the scenic Courtois or Huzzah creeks or Meramec river. Jonathan Lehmann (314)991-3969.

Jun 7 (Sat) Spring hike to Valley View Glades. This is a great time to see spring wildflowers. Paul Stupperich (314)429-4352.

Jun 13 (Fri) Hike the Greenrock Trail. Suzanne Smith, (618)281-4762 (after 7:00 pm, week nights only).

Jun 15 (Sun) Father's day canoe trip. Enjoy a day on a stream in the Meramec basin. Toni Armstrong & Richard Spener (314)434-2072.

Jun 20 (Fri) It's bike riding time at St. Joe State Park on the scenic 12 mile loop. Suzanne Smith (618)281-4762 (after 7:00 pm, week nights only).

Jun 21 (Sat) Walk around Forest Park. Six miles. Paul Stupperich (314)429-4352.

Jun 21-22 (Sat-Sun) Introduction to Missouri; springs, mills and waterfalls. This is a two day auto camping tour for those who may be new to the area or don't yet know that Missouri is beautiful. See the Current River at its source, a waterfall you can climb,



and several old mills, some of them still working. We will be camping in a forest service or State Park campground. Come one day or two. Tour will include, Rocky Falls, Alley Springs, Montauk Mill, and whatever else we can

find. Good for newcomers, families, and anyone else who wants to come. Short hikes will be included. Possible swimming if it is warm. Kathy Wodell (636)240-0675.

Jun 27 (Fri) Hike to the glades at Johnson Shut-ins and soak in the rapids afterwards. Maybe overnight camping if anyone is interested. Suzanne Smith (618)281-4762 (after 7:00 pm, week nights only).

Jun 28 (Sat) Walking Tour of Grand Center. Explore this interesting part of St. Louis' urban renewal as we stroll in the Powell Symphony Hall and Fox Theater neighborhood. The Pulitzer Foundation for the Arts and The St. Louis University Museum of Art will be two stops. Wear comfortable walking shoes and bring water. Limit eight. Ann Eggebrecht (314)725-1560.

Jun 28-29 (Sat-Sun) The North Fork river. We will camp Saturday night at Patrick's Bridge. We will be car camping, so there is no need to carry gear in the canoe. The water quality of this river is exceptional. On Sunday we will end the trip at the quaint Dawt Mill with some ice cream and home-made peach cobbler. Colin Maag (314)721-7397/(314)477-6659 or Katherine Powers (314)863-1073.

Osage Group

None submitted.

Thomas Hart Benton Group

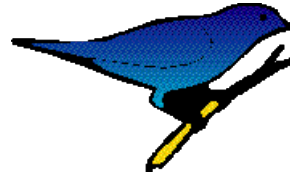
Apr 19 (Sat) Little Blue Trace Bicycle Outing, eastern Jackson County, MO. We'll ride about 12 miles on this wide, level crushed rock trail along the Little Blue River. Dave Patton (816)461-6091, dgpatt@comcast.net

Apr 26 (Sat) Prairie Ecology at the Wichita State University Field Station, Wichita, KS. Bring a brown bag lunch. Call for directions or map. Bobbie Keltner (316)722-5621

Apr 27 (Sun) 11:00 a.m. Tour of Full Circle Farm, Kansas City, KS. Full Circle Farm is a certified organic vegetable and herb farm, specializing in organically grown vegetables and herbs, including exotic & adventurous varieties, as well as seasonal standards. We will tour the farm for about two hours on Sunday. Steve Hassler (913)599-6028, hassler@planetkc.com

May 4 (Sun) Warbler Walk at James A. Reed Memorial Wildlife Area, Lee's Summit, MO. Bring your binoculars and

join the Koshlands for a casual hike on little-used trails at James A. Reed Wildlife Area to look for warblers as they begin their migration! Expect to visit meadows, ponds, & secondary forests on a leisurely 3-mile nature walk. Participants are welcome to bring lunch and eat on the Koshlands' deck, weather permitting. Walk begins at the Koshland residence—call for directions. Marilyn & Steve Koshland (816)537-5988, koshland@mindspring.com



May 9 (Fri) River Festival Parade Walk, Wichita, KS. To be followed by a Southwind Bar & Grill dinner. Yvonne Cather (316)522-4741, wolfalo@juno.com

May 10 (Sat) Scavenger Hunt, Ernie Miller Nature Center, Olathe, KS. Adults and children alike are welcome on our 2nd annual scavenger hunt at the Ernie Miller Nature Center. Ellen Brenneman (816)274-8062, ebrenn1@hallmark.com

May 16-17 (Fri-Sat) Moonlight Canoe Float on the Kaw, Lawrence, KS. We'll float the Kansas River under a full moon with Riverkeeper Dave Murphy, camping for the night. Reserve your place by contacting the leader. Carey Maynard-Moody (785)841-9594, careymm@ixks.com

May 17-18 (Sat-Sun) Flint Hills Backpacking Trip, Beaumont, KS. Our annual trip to the Ferrell Ranch in the southern Flint Hills is great for beginners and families. Learn about the interaction of cattle and this sensitive environment. Scott Hooper (816)561-0575, scott@hooper.net

May 31 (Sat) Wildflower Walk in the Baldwin Woods, Lawrence, KS. Walk the Baldwin Woods, part of the Breidenthal Ecological Reserve, with Caleb Morse of KU's McGregor Herbarium. As a bonus, we may hear and see the ovenbird which breeds in the

woods. Limited to 15. To reserve your space and for carpooling details, contact the leader. Frank Norman (785)887-6775, fnorman@bumsmcd.com

May 31-June 1 (Sat-Sun) Two-Day Float on the Buffalo National River, northwestern Arkansas. We will base camp in the Kyle Landing area. Canoe rentals are approximately \$30 per day and shuttle charges are \$5 per person per day. Melody Gross (816)228-6563, wildwoodp@hotmail.com

June 7 (Sat) Star Party, Powell Observatory, Louisburg, KS. Come

see one of the great evening programs put on by the Astronomical Society of Kansas City. Ellen Brenneman (816)274-8062, ebrenn1@hallmark.com



June 7-8 (Sat-Sun) Prairie Days Campout at Maxwell Game Preserve, McPherson, KS. Yvonne Cather (316)522-4741, wolfalo@juno.com

June 8 (Sun) Powell Gardens Spring Bike Ride, Kingsville, MO. We'll ride 25 miles through rolling hills of eastern Jackson County from Blue Springs to Powell Gardens. Enjoy the late spring show of color as we stroll through the park. Lunch at Café Thyme will be our reward. We will shuttle participants and bicycles back to the start. Paul Gross (816)228-6563, wildwoodp@hotmail.com

June 14 (Sat) Konza Prairie Hike and Bison Tour, Manhattan, KS. Join us for a one-hour, one-mile hike focusing on wildflowers and the tallgrass prairie ecosystem, followed by a two-hour auto tour of the territory where 2,300 bison roam. We'll learn about Konza research involving fire and grazing. Led by Jan Evans of the Konza staff. No limit, but contact Frank Norman by June 1 to confirm your attendance. Frank Norman (785)887-6775, fnorman@bumsmcd.com

June 21 (Sat) Martha Lafitte Thompson Sanctuary, Liberty, MO. We'll take advantage of the year's longest day to visit the nature center and sanctuary at the most opportune time. Steve Hassler (913)599-6028, hassler@planetkc.com

Trail of Tears Group

None submitted.

White River Group

Apr 19 (Sat) General membership meeting at 3:00 - 5:00 p.m. Springfield Nature Center.

May 17 (Sat) Farm tour with the Missouri Organic Association. At 10:00 a.m. we'll tour Richard and Maria Aschwanden's organic herb farm near Carthage that features Missouri's only net metered windmill. The tour is limited. Seth (417)886-7468.



SIERRA CLUB OUTINGS OZARK CHAPTER

In order to participate on one of the Sierra Club's outings, you will need to sign a liability waiver. If you would like to read a copy of the waiver prior to the outing, please see <http://www.sierraclub.org/outings/chapter/forms/> or call (415) 977-5630.

In the interests of facilitating the logistics of some outings, it is customary that participants make carpooling arrangements. The Sierra Club does not have insurance for carpooling arrangements and assumes no liability for them. Carpooling, ride sharing or anything similar is strictly a private arrangement among the participants. Participants assume the risks associated with this travel.

Eastern Missouri Group

Apr 18 (Fri) Bluebell time at St. Francis State Park. Hopefully as colorful as last year. Hike about 7 miles. Suzanne Smith (618)281-4762 (after 7:00 pm, week nights only).

Apr 19-20 (Sat-Sun) The upper section of the Jack's Fork. Plan on bringing your gear with you in the canoes and camping overnight on the riverbank. We will stop and see picturesque Alley Spring. We will also take some time out to explore Jam-up cave. Contact Colin Maag, (314)721-7397 or (314)477-6659.

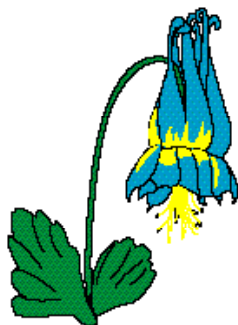
Apr 23 (Wed) First Aid Class at Crestwood Fire Department, 6-10 pm. Upon completion of class, Red Cross First Aid cards will be issued for \$1.75. Limit 10. Marilyn Harlan (314)966-8797.



Apr 24 (Thu) Learn about the Ozark Trail and participate in the annual "swap meet" at our general meeting. Bring stuff to sell. You may also pick up some bargains. Dinner at 5:30, Elsay Landing Restaurant at Plaza Frontenac and then meeting at Litzsinger School, 7:30 pm, Litzsinger & Lindbergh.

Apr 25 (Fri) Blue-eyed Mary time at Washington State Park. Hike about 6-9 miles. Yummy B'B'Que afterwards. Suzanne Smith (618)281-4762 (after 7:00 pm, week nights only).

Apr 26 (Sat) Explore the new White Oak Trail at Hawn State Park. On this 6-mile hike we will see lots of spring wildflowers. Optional two miles at nearby Pickle Springs Natural Area. Margaret Gilleo and Chuck Gunther (314)991-1305.



April 26-27 (Sat-Sun) Trail maintenance on the Blair Creek section of the Ozark Trail. This will be our last trip for this work season. We will try to camp on the gravel bar so we can cool off in Blair Creek if it is hot. Common commissary on Saturday night. Menu suggestion welcome. Bob Gestel (636)296-8975 or Paul Stupperich (314)429-4352.

Apr 27 (Sun) Earth Day celebration at the Munny parking lot in Forest Park. Come join the fun! Please



volunteer for a few hours with fellow Sierrans in a lemonade booth or an exhibit booth. 10 am to 6 pm. Call the office (314)644-0890 or Jim Young (314)664-9392.

Apr 27 (Sun) Afternoon hike. Lets take it easy and begin our hike in the afternoon. Five mile hike at Weldon Spring. Let's see if those white Trillium are still blooming. There should be plenty of wild flowers in any case. Maybe we will stop and see the spring. Yes, there really is a Weldon Spring! Optional lunch at the Country Store and Deli before the hike. Kathy Wodell (636)240-0675.

Apr 30 (Wed) C.P.R. class at Crestwood Fire Department, 6-10 pm. Upon completion of class, Red Cross C.P.R. cards will be issued for \$1.75. Limit 10. Marilyn Harlan (314)966-8797.

May 2 (Fri) Spring flowers at Shaw Nature Reserve. Hike about six-seven miles. Lunch after. Suzanne Smith (618)281-4762 (after 7:00 pm, week nights only).

May 3 (Sat) Celebrate the 25th anniversary of saving the Meramec River by canoeing with us on this 9-mile day trip. Rentals available, but you make arrangements. Jim Rhodes (314)821-7758.

May 3-4 (Sat-Sun) Camp out and hiking at Sam A. Baker State Park. We will leave late morning on Saturday and get there in time for a hike, maybe on the Ozark Trail, before our evening supper and songfest. We'll hike the eight miles of the trail system Sunday, climb Mudlick Mountain and see blue granite and shut ins. Extra hiking points if you spot an amadillo. Kathy Wodell (636)240-0675 and Wayne Miller (314)569-0094 are your trip leaders.

May 9 (Fri) Azalea time at Hawn State Park on the six mile north loop. Join us for hiking and late lunch. Suzanne Smith (618)281-4762 (after 7:00 pm, week nights only).

May 10 (Sat) Canoeing on the beautiful Castor River, a crystal clear Ozark stream that abounds with wildlife. Bring your own boat and gear. Jo Arne (314)664-8299 and Jim Moody.

May 10 (Sat) Highway cleanup. You know that your mom likes the roadways nice and tidy. Diane DuBois (314)721-0594.

May 10 (Sat) Yellow Ladies Slippers on this tour of

Hawn State Park, Pickle Springs, and Silas Dees Azalea Preserve. Short hikes. One to three miles. Kathy Wodell (636)240-0675.

May 10-11 (Sat-Sun) Spring River in Arkansas. Camp at Riverside Campground near Mammoth Springs. Many small waterfalls and fast shoots create an area known as Saddler Falls. Paddlers may also have an up close opportunity to see a pool and drop geology that make for an exciting river. There may be a side trip to Grand Gulf State Park, a collapsed cave system. Colin Maag (314)721-7397.

May 16 (Fri) Two short hikes to two beautiful glades. Valley View & Victoria glades in Hillsboro. Suzanne Smith (618)281-4762 (after 7:00 pm, week nights only).

May 16 (Fri) Huzzah Creek. We will put in at Red Bluff above where the outfitters put in. This is a remote isolated stretch with quite a few twists and turns. Colin Maag (314)721-7397.

May 17 (Sat) Little Piney river. This class I (with some class II) river is located just on the other side of Rolla. This time

of year, we will be able to put in high upstream. This river is interesting enough to hold the interest of someone with canoeing

experience or provide a memorable and challenging experience to a beginner. Colin Maag (314)721-7397.



May 17 (Sat) Find lots of "creepy-crawlies" as we test water quality on Fox Creek near Eureka. Help us identify the aquatic insects, test for DO and other chemical parameters, and measure stream flow. We should see a lot of macro invertebrates. Call Leslie Lihou at (314)726-2140, or Jim Rhodes (314)821-7758.

May 18 (Sun) Courtois creek. This time of year, we will be able to put in high upstream. We will put in at Brazil creek. There are some twists & turns in this stretch. Colin Maag (314)721-7397.

May 30 (Fri) 6-8 mile hike at Shaw Nature Reserve. Suzanne Smith (618)281-4762 (after 7:00 pm, week nights only).

May 31-Jun 1 (Sat-Sun) Glade restoration/Trail Maintenance camp-out and hike to thank our volunteers. If you have participated in either glade restoration or trail maintenance, or if you think you'd LIKE to participate in one of these activities next season, come join us to see the results of some of our hard work. Susan Farrington at (314)402-3345 or 1(626)584-0575 or Bob Gestel (636)296-8975.