Why Shale Gas from Hydraulic Fracturing Is Not the Clean Energy Solution We Need

By Joe Spease

T. Boone Pickens and the natural gas industry have spent hundreds of millions of dollars since 2006 trying to convince people that natural gas is clean and cheap. President Obama was seduced by gas industry claims and even included shale gas in his Renewable Electricity Standard (RES), part of the ill-fated energy bill that died in the Senate. He bought into gas industry claims that shale gas was the ideal energy source to serve as a bridge from fossil fuels to renewable energy sources and was therefore deserving of subsidized support for development.

Now, after seeing the disturbing images of environmental damage resulting from the drilling method known as hydraulic fracturing, shown in the Academy Award-nominated documentary Gasland, people are discovering that shale gas is neither cheap nor clean.

The gas industry claims that we have no choice but to use shale gas because coal power is dirty and poses both health and environmental risks. Nuclear power, as the recent disaster in Japan illustrated, is both dangerous and expensive, and its radioactive waste is a serious national security threat. So, the gas industry asks, what abundant and “clean” resource can we use for base load power other than natural gas?

The gas industry has jumped onto the anti-coal, anti-nuclear bandwagon, riding the wave of concerns about climate change all the way to the White House in 2003. There the Bush Administration, with the influence of Vice President Cheney and his energy policy cabal, included irresponsible exemptions for fracking demanded by the gas industry in the Energy Policy Act of 2005. These exemptions absolved companies extracting shale gas through hydraulic fracturing from account-
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Enough Is Enough: Sunflower’s Permit Should Be Revoked

By Bob Sommer

By now it should be clear to anyone who has followed the five-year saga of Sunflower Electric’s efforts to build a second coal-fired utility plant in Holcomb, Kansas, that the public has been misled and misinformed by supporters of this project.

From the outset, Sunflower campaigned for this coal plant—originally three coal plants—on the grounds that Kansas needed the energy and it would bring new jobs. In reality, most, if not all, of the energy would be sold to companies outside of Kansas, leaving the pollution here while the electricity went elsewhere. The promise of new jobs amounted to relatively few permanent jobs that could easily be provided by building renewable energy facilities.

Proponents of Holcomb II usually neglect to mention that Sunflower’s primary financial backer, Colorado-based Tri-State Generation and Transmission Association, has investments in coal mines that produce some 20 million tons per year. Additionally, Tri-State is a member of the Western Fuels Association (WFA), which operates a fleet of 1,600 rail cars, delivering coal throughout the Midwest, including to Sunflower’s existing plant in Holcomb. Coincidentally, Sunflower’s outgoing CEO, Earl Watkins, is also on WFA’s Board of Directors.

What incentive could anyone have to disrupt the chain of profit—or to slow its growth? Better yet, Tri-State gets a downwind state to host the new coal plant, even as the co-op touts its investments in wind energy in Colorado.

As a friend of mine succinctly put it, “Kansas will be Colorado’s coal bitch.”

Recent revelations of collusion between Sunflower and the Kansas Department of Health and Environment make it clear that the public has unknowingly been playing with loaded dice. At every stage of this long debate information has been slanted and even corrupted by supporters of this plant.

KDHE is supposed to be a watchdog for Kansans, protecting health and environment. But when former Gov. Mark Parkinson didn’t get the support he wanted for this project from KDHE Secretary Rod

See Permit on page 11

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KDHE Gives Sunflower Coal Plant another Free Pass to Pollute

Waiver favors Colorado special interests over Kansas health and environment

The following is a press release from Sierra Club and Earthjustice.

TOPEKA, KS --- Thursday, KDHE quietly issued Sunflower and Tri-State another free pass to pollute by allowing the proposed Holcomb II coal plant to yet again escape compliance with the Clean Air Act.

Sunflower, which seeks to construct a controversial new coal plant in Western Kansas, was excused from a requirement to begin construction of the coal plant within 18 months of receiving a permit. Despite it only being 7 months since the permit was issued, Sunflower is already seeking to avoid the construction requirement. This is likely due to the fact that neither Sunflower nor Tri-State have a need for the coal plant, according to both coops own resource plans, and Tri-State reported long ago it had delayed construction of the Holcomb II coal plant until 2016 at the earliest.

"By already allowing Sunflower to avoid complying with terms of the permit KDHE itself issued, one has to question what else Sunflower will be excused from in the future," said Stephanie Cole of the Sierra Club.

"The state continues to turn its back on Kansans and the law. The Environmental Protection Agency has a clear obligation to require appropriate procedures to be followed in this case. Time and again, the EPA has allowed this project to avoid following the law. This is no longer acceptable, and we fully expect the EPA to act where KDHE has failed to do so," said Amanda Goodin, an attorney with Earthjustice.

Ironically, Sunflower, with the help of KDHE staff "volunteering" to work overtime, rushed the permitting process last year to obtain a permit for a coal plant that it knew was not needed or even an economical endeavor in the near-term. Now, Sunflower and Tri-State are asking to delay construction without complying with provisions of the Clean Air Act that require permits to be updated to include modern pollution controls if construction cannot commence within the required 18 month timeframe.

"Just like the rush to permit the project prior to new greenhouse gas regulations taking effect, this is yet another attempt to avoid the requirements of the Clean Air Act. KDHE is giving Sunflower another free pass to pollute and doing so without even allowing the public an opportunity to comment on this unprecedented move," said Cole.

It has been obvious for a long time to anyone remotely following the coal plant debate that near-term construction of Holcomb II was unrealistic given Sunflower’s poor financial standing, the lack of need for new generation, and Tri-State’s preparation of an electric resource plan for Colorado regulators that does not include Holcomb II.

With the troubled Holcomb II coal plant being noticeably absent from Tri-State’s own resource plan and unfriaded reports that indicate the Colorado coop had long ago delayed construction of the coal plant until 2016 at the earliest, promises of jobs and arguments of urgent power needs lose credibility with Tri-State and Sunflower now delaying construction. Near-term construction of Holcomb II would result in a large overbuild of capacity, which is in large part why Sunflower remains in debt to taxpayers for its existing coal plant at Holcomb and also why it’s highly unlikely genuine plans to being construction within the required 18 month timeframe ever existed.

Rather than following the typical procedures for extending the construction requirement of a permit, Sunflower and Tri-State submitted a request to KDHE that is so unusual that even the EPA and the former Secretary of KDHE, Rod Bremby, reported to the Kansas City Star that they were unfamiliar with such a peculiar request.

Important Highlights

- The permit KDHE issued Sunflower requires construction of Holcomb II to commence construction by June 16, 2012.
- During the permitting process last year KDHE was presented with numerous comments that identified Sunflower and Tri-State’s transparent attempt to gain a permit prematurely. These comments requested that KDHE require the necessary permit updates and public input when the inevitable requests to delay construction were submitted.
- The Holcomb II permit is the most controversial permit KDHE has ever considered – yet the agency improperly approved a significant change to the permit without even allowing for public comment.
- Earthjustice and Sierra Club argued for KDHE to follow the appropriate and traditional requirements for permit extensions that would include an updated environmental analysis, a “Best Available Control Technology” analysis, and public input. These requests, which reflect the law, were ignored.
- The approval of Sunflower’s request will allow Sunflower to avoid requirements of the permit KDHE issued and avoid considering the most stringent pollution control technologies that would best protect public health and the environment.

Read KDHE’s order at: http://goo.gl/8qyl

We need your help in asking EPA to direct KDHE to require the Sunflower coal plant permit to go through the appropriate procedures for extending the construction deadline in a permit. This type of extension should include an updated Best Available Control Technology analysis and a public comment period. You can send this request to Karl Brooks, Region 7 EPA Administrator, at this address: r7actionline@epa.gov
KC’s Energy Solutions Homes Tour October 1


This year’s Energy Solutions Homes Tour will feature 15 homes touting energy efficiency and renewable energy in virtually every part of the KC Metro area. The Tour will be a “self-guided” tour, meaning that attendees will select the homes they wish to see and the times they wish to see them, and then drive themselves to the homes of most interest to them. This is different from last year’s tour where 4 homes were visited using bus transportation.

“The Heartland Renewable Energy Society Board (HRES) wanted to provide as many locations as possible for interested folks to go see,” said Craig Wolfe, President of HRES. “We hope this year’s format will make it possible for as many folks as possible to discover their own energy solutions.”

HRES is also excited that Greenability Magazine will be their communications partner for the 2011 Energy Solutions Homes Tour. Greenability readers will find a large spread in their September/October issue describing the Tour and its homes. Attendees will be able to go to any of the Tour homes to purchase their tickets, which will get them into any and all of the 15 homes. (Tickets are $10. Kids under 12 are free.)

“Renewable energy is the key to our clean and safe energy future,” Wolfe says. “However, you must first start with energy efficiency, and then complete the job with renewable energy. But our country and our planet better get started.” Wolfe got started in 1978 when he built his own passive solar home, which will be on this year’s tour.

“We will be adding lots of info to our website,” says Wolfe. “You can get more information at www.kcsolar.org.”

Put Your Energy To Good Use


Interested in energy efficiency tax incentives? Looking to get a home energy audit? Want to help Lawrence beat Manhattan in the Take Charge Challenge? Learn how to save energy, money, and the environment at the 2011 Lawrence Energy Conservation Fair.

Admission is FREE!

The City of Lawrence Waste Reduction and Recycling Division will host the Fair on Saturday, September 10th from 10 am to 4 pm, at the Community Building, located at 115 W. 11th Street. Homes Tour buses will leave from the Community Building promptly at 10:30 am and 1:30 pm.

Throughout the day you will have opportunities to view energy conservation exhibits and to consult with experts on how their products and services can increase energy efficiency in your home or business, save money and help the environment. Exhibitors will include area architects, insulators, heating and cooling experts, wind and solar companies, government agencies, non-profits, and alternatively-fueled vehicle representatives.

The Heartland Renewable Energy Society’s Sustainable Homes Tour will feature area homes that incorporate energy conservation design and products. Peak inside some of the area’s most energy-wise homes, and see how these homeowners used renewable energy building design, materials, construction methods, and energy saving appliances. Tour tickets will be sold on site at the Fair and buses will leave from the Community Building.

Walk, Bike or Ride the Bus to the Energy Fair Downtown!

The Lawrence Transit System will offer free rides on the T all day Saturday, September 10th, providing the experience and benefits of public transportation on all fixed routes. To get help planning a route or for more information, call (785) 864-4644 (Monday-Friday, 8 am – 5 pm) or visit www.lawrencetransit.org.

For more information on the Fair and a complete list of sponsors and exhibitors, please visit our website at www.LawrenceRecycles.org.
The Wakarusa Group joined the 23 to canoe and kayak paddlers on the Wakarusa River above Clinton Lake on Saturday, June 4.
Fracking, continued from Cover

ability to the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, and many more sensible environmental regulations. One must ask, if hydraulic fracturing, as the gas industry claims, is safe and is no threat to our water and air, then why the pressing need for exemptions from regulations that would hold gas companies responsible for their potential environmental damage?

What is hydraulic fracturing? Google the term and you’ll find a library’s worth of information on it. In short, this is how it works: gas companies first drill vertically about a mile deep, and then drill horizontally for as much as another mile or so. Once the drill has reached the desired shale gas formation, a fluid mixture that contains from one to seven million gallons of water, huge quantities of sand, and combinations of as many as 900 different chemicals weighing hundreds of thousands of pounds, many of them toxic chemicals, is delivered under very high pressure, often over 6,000 psi, to blast the shale rock apart, freeing gas contained in the rock to flow back to the surface.

As the documentary Gasland makes clear, hydraulic fracturing, or “fracking,” causes many problems. Despite industry claims to the contrary, fracking contaminates water supplies. The gas industry, in carefully worded statements, claims that fracking is not known to contaminate water. They cleverly restrict the definition of fracturing to the moment when the toxic, pressurized fluid fractures the rock. Technically they are correct because there is no way of knowing exactly what is going on miles beneath the surface inside a solid rock formation. But after hundreds and thousands of people have seen their water supplies contaminated once fracking operations commenced near their homes, it is abundantly clear that there is a connection between fracking and water contamination.

To be sure, one fracking well in Pennsylvania recently experienced an explosion that sent thousands of gallons of the toxic fluid into a nearby stream. The gas industry dismisses that event as unrelated to fracking. Average citizens use the term fracturing to describe the whole drilling process, while the gas industry companies limit the definition of the term to avoid regulatory oversight.

Pennsylvania sits on top of the vast Marcellus shale gas formation, which includes parts of several Mid-Atlantic states. That state is now dealing with 1,500 reported violations from fracking during the last two years. Gas companies have been caught illegally dumping hundreds of thousands of gallons of spent diesel fuel used during the fracking process into wells and onto forest service land. New York has passed a law preventing fracking near fresh water supplies. France has completely banned fracking. New Jersey has prevented fracking from being used. Meanwhile, Congress is fighting to deregulate it!

While we aren’t sure what happens to much of the toxic fluid that is blasted underground, much of it, millions of polluted gallons, flows back to the surface and is placed in holding ponds. Since those ponds are a great risk to water supplies, many states are considering requiring gas companies to haul that water to designated treatment facilities.

Another problem from fracking concerns the huge amount of nitrogen oxide (NOx) emitted at the drilling site from the fuel combustion powering the drills. NOx contributes both to climate change as a heat-trapping gas and to smog creation, which causes respiratory problems that increase healthcare costs. Thousands of fracking wells are tapping into the Barnett shale gas formation surrounding Fort Worth, Texas. When public health officials there were alerted to a shockingly high increase of respiratory problems at hospitals and doctors’ offices, they sought out the source of the problems and discovered that the NOx emissions from the fracking wells amounts to more NOx than from all the cars and trucks combined in the Fort Worth region.

Cornell University professor Robert Howarth released a peer-reviewed study in May 2011 on shale gas and hydraulic fracturing. He points out that when fracking and shale gas usage is analyzed in its entirety, shale gas contributes as much greenhouse gas (GHG) emissions as burning coal. He makes it clear that he is NOT defending the use of coal but rather that scientific study makes it clear that shale gas is NOT the environmental solution described by the gas industry through the hundreds of millions of advertising dollars spent promoting “clean” natural gas. Methane, the main component of natural gas, is a more potent GHG than the CO2 from coal plants. Pound-for-pound methane has 105 times the warming impact of CO2! Howarth believes that 8% of shale gas escapes into the air from fracking. This means that if we were to convert all the coal plants in the country to natural gas power, we would not achieve the GHG reductions needed by 2030 to avoid economic and environmental disaster.

We need to tell the gas industry, and the thousands of legislators and congressional representatives fighting to prevent regulation of the shale gas industry, that shale gas isn’t cheap and it isn’t clean. If drilling for and burning natural gas are adding billions of dollars to our healthcare bills, and billions of more dollars are being spent globally to address the effects of climate change that we are already seeing, and billions of dollars are being spent to clean water contaminated by fracking, then those costs should be added to gas bills and then subtracted from the costs of wind and solar power that reduce those costs. Excluding shale gas from needed regulations is hurting this country. So is not including the real cost of shale gas on gas bills.

Do we even need shale gas, as we’re being told we do by the gas industry? It isn’t clean, and it isn’t cheap, as I’ve shown, when the true cost is calculated. Remember, all it takes is one fracking accident in a major aquifer or water
source, and tens of millions of people will be threatened. Additionally, irrigation supplies for agriculture will be ruined. Should we take such risks when shale gas isn’t even needed? Consider that the Niobrara shale gas formation in Northwest Kansas is right below the Ogallala Aquifer, a critical source for farming and ranching in western Kansas.

There are technologies available right now that make shale gas unnecessary. The first is energy storage. A disclaimer: My company develops wind/compressed air energy storage (CAES) projects. So I am biased in evaluating this technology. Fortunately, the Electric Power Research Institute (EPRI), the Princeton Environmental Institute, the National Renewable Energy Laboratory, Sandia National Laboratory, and many utilities have issued detailed studies and examinations of CAES and other forms of energy storage that confirm energy storage as a ready and helpful technology. The Department of Energy (DOE) has made billions of dollars in grant funds available to advance the use of energy storage. I am not alone in supporting the use of energy storage to solve the problem of climate change by accelerating the development of wind and solar power, and thus hastening the retirement of coal and gas power plants.

CAES and other forms of energy storage, like flow batteries or pumped hydro storage, take advantage of nighttime wind power. I will use CAES as an example since that is what I know best. Nighttime wind is a useless commodity since there is little demand for electricity at night. Nuclear and coal plants have to run at the same power production level 24 hours a day 7 days a week so their power output can’t be reduced without causing problems. There is so much wind at night that wind projects are being shut down to avoid putting too much power onto the grid, which can cause damage. Energy storage solves this problem. CAES projects use the wind at night that wind projects are being shut down to avoid putting too much power onto the grid, which can cause damage. Energy storage solves this problem. CAES projects use the wind at night to power compressors that pressurize air, which is then injected into natural geologic formations like depleted natural gas wells, salt domes, saline aquifers, or porous rock formations. Several days’ worth of the rated power of a wind project can be stored as pressurized air. During the day, if the wind isn’t blowing, the pressurized air is released through a modified combustion turbine to make electricity. This process is simple, clean and cheap.

CAES turns wind power into a dispatchable power source, constantly available during the day that is cheaper and cleaner than coal or gas power. And CAES isn’t really a new technology. Two CAES plants—a 290 MegaWatt plant in Germany and a 110 MegaWatt plant in Alabama—have run efficiently since 1978 and 1991 respectively. They are also highly reliable, with dependability ratings of about 97%.

In my opinion the gas industry is pushing hard to dominate the power sector precisely because technologies like wind/CAES, which are cheaper and cleaner than gas power, are about to enter the market. If they can suck all the investor dollars into shale gas operations, there won’t be enough capital left to develop wind/CAES projects. And since companies like Exxon have invested tens of billions of dollars in shale gas formations, they will fight to prevent wind/CAES from coming to market, at least not before they get back the huge investments they have made on shale gas. Americans should be telling the gas industry, legislators, and congressional representatives that shale gas isn’t needed because we have technologies like wind/CAES or wind/energy storage of some kind that already exist and are cheaper and cleaner than shale gas.

Finally, is Boone Pickens right that we must spend hundreds of billions of dollars of taxpayers’ money to construct a massive natural gas pipeline infrastructure needed to send shale gas to every corner of the country for a couple of decades? Is there no option to Compressed Natural Gas (CNG) to transition from oil/gasoline? See The Hydrogen Solution on page 9.
The Hydrogen Solution

By Joe Spease

Is there no option to Compressed Natural Gas (CNG) in our transition from oil and gasoline? Quite simply, CNG isn’t needed. There is a far better option that is cheaper and cleaner: Renewable hydrogen (H2) made from water and wind power at night makes CNG unnecessary.

First, making H2 onsite at locations, H2 refueling stations, in places just like the gas stations we currently use, will eliminate the need for the massive, expensive pipeline infrastructure needed for Boone Pickens plan. Next, using the cheap wind at night to power electrolyzers to make the H2 from waste water, salt water, or other water sources, produces H2 at a cost of only $2.50-$3.00 per kilogram (kg). One kg of H2 is equivalent to a gallon of gas for vehicles converted to run on H2. This is where we can use at least one small part of the Pickens plan, to convert vehicles to run on H2. Any car or truck today can run on H2, just as they could run on Pickens CNG (CNG is about 70% H2). With simple changes to the combustion chamber, exhaust system, and storage tank (storing H2 at high pressure requires something like a carbon fiber cylinder), we have vehicles ready to say, “Bye bye, gasoline!”

Switching to H2 instead of CNG will lower fuel costs, stop the transfer of hundreds of billions of dollars to countries supplying our oil where many of their people don’t like us, increase our national security, create millions of jobs in this country, reduce GHG emissions, clean up the environment by eliminating oil and gas spills, improve our health and lower healthcare costs, stabilize the economy for fuel costs like we have never seen since the costs of wind and water don’t change much, and actually increase our supply of fresh water since switching to H2 fuel actually reduces the use of water in refining oil into gasoline by 66%!

Electricity production from wind power and CAES is cheaper and cleaner than shale gas/CNG, and the technology already exists to switch to H2. But once again, we are up against an industry that has invested hundreds of billions of dollars in vast oil and gas fields and will fight vigorously against the development of renewable H2 until their oil and gas fields’ profits are exhausted.

There is yet another exciting development in the H2 category. One of the big cost and supply problems for H2 is the need for platinum as a catalyst in H2 fuel cells. Platinum is in short supply and is expensive. Granted, not much platinum is needed in each fuel cell, but it would still be problematic in a massive conversion to H2 fuel cell vehicles (the H2 solution discussed earlier describes regular internal combustion engine vehicles, not the fuel cell powered vehicles discussed now). Researchers believe they have created the cheaper catalyst long sought. It is made of an iron-cobalt combination that costs 1/650th as much as platinum and is almost (within about 5%) as efficient as platinum. This will drive down fuel cell costs and improve reliability. If fuel cell vehicles can travel about 100 miles per kg of H2, and the average driver goes 1,000 miles per month, that would mean 10kg of H2 per month at $3/kg = $30/month in fuel costs for the average driver in the USA. That math speaks for itself. All we need is the political will to say “No!” to the oil and gas companies and the congressional representatives who do their bidding. Then, cheaper, cleaner fuel solutions will become a reality.

Shale gas, therefore, isn’t needed for vehicle fuel either. It’s very clear that the message being pounded into us about the need for shale gas is not true. Shale gas is not the answer to our electricity or vehicle fuel needs. With the environmental risks at stake from extracting and burning shale gas we cannot justify fracking. Shale gas isn’t needed because cleaner and cheaper options exist that make it unnecessary.

Americans must demand that the best energy options be made available to the public and all other entities. The risks from shale gas and fracking are too high to tolerate. The alternatives are cheaper and cleaner. Let’s work together to create the better energy and fuel future for America. Start spreading the word!

Legislative Director Position

The Kansas Chapter of the Sierra Club will be hiring for the Legislative Director and Lobbyist for the 2012 Session. To request information and position criteria, send an email to info@kansas.sierraclub.org
Book Review:

**Bottled Lightning – Superbatteries, Electric Cars, and the New Lithium Economy**


By Mike Miller, Roeland Park, KS

This is an excellent, up-to-date history of the development of the electric car and the basic science of battery technology that made it possible. The author, a senior editor at Popular Science magazine, has written a readable, exciting work that is a "must-read" for environmentalists. It is the most interesting book I have read in several years.

The book begins with an explanation of how batteries work and the contributions of Thomas Edison to the early development of the electric car; it lost out to gasoline powered vehicles because an infrastructure to recharge batteries was non-existent at the time. Edison patented the most efficient battery of its time in 1908; it happened to use lithium as an ingredient in its electrolyte. Lithium subsequently was to be recognized as the ideal metal for batteries because it was light (its atomic weight is 1/30th that of lead) and has a high electro-negativity (the tendency to donate electrons).

Interest in the electric car and battery research was rekindled in the 1960's by the recognition that cars were the major cause of air pollution (90% in the case of Los Angeles). The Arab Oil Embargo of 1973 provided additional impetus to battery research. However, the election of Ronald Reagan in 1980 and the oil glut in the early 1980’s lead major players to withdraw from the field.

Developments in wireless communication, first conceived by Bell Lab in 1947, lead to tremendous interest in low toxicity, rechargeable, increasingly small (more energy dense) batteries. This culminated in the introduction by Sony in 1992 of a 3.6 volt, rechargeable, lithium-ion battery which had three times the energy density of lead-oxide, twice that of nickel-cadmium, and 10-20% higher than the nickel-metal-hydride batteries that had just been introduced. This reduced the number of batteries required by the amplifiers used in existing cell-phones to six to two and contributed to the explosion in the market for handheld cell-phones beginning with Motorola in 1994. That the new battery would revolutionize other electronic gadgetry was rapidly apparent to industry and major players in electronics, primarily from Japan, joined the race to further develop the lithium-ion technology.

The value of the lighter-weight batteries for electric cars was also immediately appreciated by industry. In 1990, GM announced it would introduce an electric car for production – what came to be the notorious EV1. Later that year the California Air Resources Board mandated that each car company make 2% of its cars “emission free” by 1998. The EVI, powered by a nickel-metal-hydride battery with a range of 150 miles, became available for lease in 1996. It was an immediate success with the number of potential lessees far exceeding the number of EV1’s available. For reasons that remain unclear, GM took the car out of production in 2002 and destroyed the remaining EVs. The story of the EV1 was chronicled in the acclaimed documentary Who Killed the Electric Car.

The fabulous success of the Toyota Prius, introduced in 2001, lead to vastly renewed interest in electric cars at GM culminating in the introduction of the Chevrolet Volt as a concept car in early 2007. GM began seeking a supplier for a battery with high enough energy density that it would allow a range of 40 miles (sufficient for 85% of American commuters), enough power to meet the performance expectation of the general public, and a 10-year/150,000 mile warranty on the life of the battery. The decreased demand caused by the financial melt-down in 2008 coupled with the huge losses at GM leading to its filing for bankruptcy in 2009 made many doubt if the promise of the Volt would ever be achieved. The successful resolution of the bankruptcy and the strong support of the Obama Administration allowed GM to survive, not in small part to the anticipated success of the Volt.

What about the supply of lithium – is there going to be a lithium cartel like OPEC? The best lithium deposits are in evaporated, salt lakes to which it has been transported from nearby rock formations. This sort of geology is located in the triangle in South America formed where the boundaries of Chile, Bolivia, and Argentina meet. Identified reserves (economically and legally developable at the present time) include Chile – 7.5 million metric tons (megatons - mt), China - 3.5 mt, Argentina – 0.85 mt, Australia - 0.58 mt, and the US – 0.038 mt. However, approximately 32.5 megatons of potentially developable deposits have been identified; these include Bolivia – 9 mt, Chile – 7.5 mt, China – 5.4 mt, and the United States – 2.6 mt. Chile is the major producer at this time. It is in the best position to meet the 60 thousand annual demand expected by 2020 if electric cars reach a five per cent adoption rate. Bolivia has excellent reserves but it will take several years for the infrastructure to be in place to support all of its lithium.

See Book Review on page 11
develop them. Adequate supply should not, then, be an issue. Moreover, unlike oil, lithium is not consumed by incorporation in a battery but is available for re-use after recycling. On the other hand, just last month the head of Argentina’s Ministry of Science and Technology proposed an OPEC-like arrangement for the “lithium triangle” of Chile, Bolivia, and Argentina.

The Obama Administration recognized that the depression and the economic stimulus required to help reverse it provided an opportunity – a “sputnik-moment” per Energy Secretary Steven Chu - to jump start (pun intended) an electric battery industry in this country. Over $2 billion were directed to members of the Advanced Battery Consortium, many located in the so-called “rust belt.” Competition from China (BYG), Japan (Panasonic, Mitsubishi, and NEC), and Korea (LG Chem and Samsung) is fierce. Enerdel, located in Indianapolis, is the largest battery producer in the US but has facilities only 1/5th the size of some Japanese producers. The weight of batteries makes manufacturing batteries in the countries where the cars will be sold a necessity so foreign companies will set up production facilities here. Even though labor costs for battery production are not as big a factor as in other sectors, China still has the advantage of being able to rapidly construct new production facilities due to its authoritarian “state capitalistic” approach to development. Our edge in advanced research capacity may allow us to catch up if financial support from the federal government remains available as it is in other countries – and this is a big if judging from the unbelievable partisanship shown by the Republicans in Congress on the debt limit issue.

The Volt came on the market last December. GM chose the American affiliate of the Korean company LG Chem to supply the battery because of its long experience in the field. The battery is t-shaped, six feet long, weighs 400 pounds, and consists of 200, 3.6 volt lithium-ion cells wired together to achieve a 16 kwh (kilowatt-hour) capacity. The battery supplies an electric motor with a power of 111 kw (149 HP); however, in order to meet the 10-year life-expectancy requirement, the battery only operates within a discharge window of 30-70% reducing its effective storage capacity to 8 kwh. This allows a range of 40 miles on a single charge. There also is a back-up 55 kw motor supplied by a generator connected to a 1.4 liter internal combustion engine that runs on gasoline; this extends the range to approximately 380 miles. Overall fuel efficiency is 62 miles-per-gallon according to the EPA. The author of this book had the opportunity to drive a Volt and was tremendously impressed with its styling, handling, and performance.

We all want the electric car to succeed. Yet, the general public may not be ready for a purely electric car with its limited range. The extension in range provided by the Volt’s gasoline engine overcomes this limitation and economies of scale and

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**Book Review, continued from page 10**

Bremby, he fired him.

In February, at Bremby’s first public appearance following his dismissal, he said the review of Sunflower’s permit application “was not a benign, routine, pristine process. Unfortunately, there were abuses.”

“Look at the lobbying dollars in this process,” he added. “It’s staggering.”

A recent investigation by Kansas City Star reporter Karen Dillon revealed that emails between Sunflower employees and KDHE officials demonstrate a pattern of collusion in marketing this unnecessary and dangerous project to an unwitting public. Such collusion did not begin recently.

Parkinson’s 2009 backroom deal with Sunflower under-mined years of efforts to stop this plant by those of us concerned with the environmental damage and health risks it posed. He sidestepped the legislature just as it was on the brink of supporting then-Gov. Sebelius’s veto of a bill that would have permitted two plants. His meeting with Sunflower executives was not public, nor was it disclosed until after the deal was done, and emails demonstrate that even KDHE’s own staff questioned the “green provisions” of the agreement.

The damage and growing danger to our environment from noxious gases emitted by coal plants have been well documented and accepted by an overwhelming majority of the scientific community. As NASA scientist James Hansen has pointed out, “Coal is the single greatest threat to civilization and all life on our planet.”

The battle to deny this reality has nothing to do with science or any other diversionary issues that often find their way into the argument. It’s about money. The fossil fuel industry has a large stake in keeping America dependent on coal and oil. Exxon, Peabody, Koch Industries, and other energy companies continue bankrolling “think tanks” and junk science to make the case for more digging and drilling and burning.

Given the collusion between Sunflower and KDHE in fast-tracking this permit, the Environmental Protection Agency should deny Sunflower’s request to build a new coal plant. Additionally, the Kansas Attorney General’s office should begin an investigation into corruption in the permitting process for this plant. To do less would risk leaving Kansas with the hazardous legacy of this tainted process.

Bob Sommer is Chair of the Sierra Club’s Kanza Group and serves as Political Chair of the Kansas Chapter. A version of this essay appeared previously at the Kansas City Star Midwest Voices Blog.
SIERRA CLUB COFFEE

The Southwind Group is now selling Sierra Club coffee. This coffee is organic, shade grown and fair trade. You have the choice of drip ground or whole bean. You also have the choice of custom blend regular or decaf, and french roast. All coffee comes in a 12 oz. container. Help Protect the environment and get your coffee too!

For information contact: stuart.bolt@kansas.sierraclub.org

Free Shipping until March 31, 2010

Mail to: Sierra Club Southwind Group, 4015 Hammond Dr., Wichita, KS 67218-1221

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Southwinders – Save The Dates!!

By Ellie Skokan with contribution by Cindy Amos, GPNC

Sierra Club Southwind Group and the Great Plains Nature Center (GPNC) will strike out on a joint venture with “Take a Hike”, a come-and-go event on Saturday, Oct. 1st, from 9 am to 11 am. Spend time walking, running or hiking the trails of Chisholm Creek Park (6232 E 29th St N in Wichita), enjoying the cool weather and checking out the fall colors. Prizes made available by the American Hiking Society will be given away.

A second collaborative effort between Southwind and the GPNC will take place on Saturday, November 19th, when a hike and campfire program will be offered at 6:00 pm. Join us for a staff-led hike through Chisholm Creek Park, followed by s’mores and stories around the campfire. More on this in the next edition of Planet Kansas.

Be sure to mark the dates on your calendar and make plans to hit the trails and enjoy nature with us!

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Book Review, continued from page 11

Improved technology should reduce its price costs in the near future. A recharging infrastructure is rapidly being put into place across the country. However, deployment of expensive, megawatt size charging stations will be required to reduce the electronic refueling time for existing batteries to that of gasoline filling stations. Research to produce batteries with a high enough energy storage capacity to extend the range of electric cars to several hundred miles, such as IBM’s Battery 500 Project, is vital. This area of research is probably the most important in the world today as we confront the problems of climate change and dwindling gasoline supplies.

Note: in the first quarter of 2011, 1,200 Chevrolet Volts and 471 Nissan Leafs were sold.
Eating as Though the Earth Matters: Deadly Trios and the Abandonment of Arrogance

By Judy Carman

According to a report made public on June 21, 2011, by the International Programme on the State of the Ocean which met at Oxford University earlier this year, there is a “deadly trio” causing havoc in our oceans today. These three include warming, acidification, and anoxia (lack of oxygen). The international group of marine scientists met to consider the impact of the many stressors on the world’s oceans, including the deadly trio and, of course, overfishing. They evaluated the latest science from various disciplines and concluded that if the current rate of human caused damage continues, we are at “high risk of entering a phase of extinction of marine species unprecedented in human history.”

At the website, www.stateoftheocean.org/ipso-2011-workshop-summary.cfm (http://goo.gl/lyDaj), you can see case studies and several videos detailing more of the research. The scientists point out in the report that “Most, if not all, of the five global mass extinctions in Earth’s history carry the fingerprints of the main symptoms of global carbon perturbations (global warming, ocean acidification and anoxia…” These three factors are here now. The acidification is happening more quickly than it has in the past 55 million years. Add overfishing to the mix and the stress on the oceans is becoming overwhelming. The delegates to the State of the Ocean conference called for “urgent and unequivocal action to halt further declines in ocean health.”

In a recent article on blackfish.org (a European based conservation organization website) entitled, “Our legacy: A dead ocean?” it is made clear that overfishing is also a huge culprit in the demise of the world’s seas. According to Blackfish, “...the global fishing fleet now has the capacity to catch the world’s catch three times over. It is simply an industry gone out of control. All commercially caught species are currently overfished, with some species such as bluefin tuna, European eel and numerous shark species literally at the brink of extinction. Add to that the fact that millions in subsidies are still handed out annually to build new vessels, improve catch technology and increase efficiency and it is clear where the priorities lie…”

The article begs us to take action and consider our own personal choices about whom we consume. “We are currently allowing the greatest ecosystem on our planet earth to perish and die off... within our lifetime. The blue wilderness is what made earth the planet of water she is and gave us life. Is this life worth saving?”

As the May-June, 2011, issue of “Sierra” magazine points out, in its “Up to Speed” column “Global fish consumption is at an all-time high.” Large fish such as tuna and swordfish have declined to a third of their original numbers and are predicted to be “all but gone by 2050.”

So there’s the bad news. What’s the good news? What is it that we can do to heal the oceans? One of the answers is as clear as an unpolluted mountain stream. It is something we can do three times (or more) a day that doesn’t take more time out of our day or money out of our wallets. Yet the consequences, if enough of us take this action, are so far reaching that the oceans and those who call it home could be saved and healed.

First of all, overfishing is a no-brainer. Obviously, the way to turn that around is to stop eating fish. But what about the deadly trio? There are many interconnected and complex reasons that they are doing so much damage. What is the good news then? What can we do? As it turns out, one of the primary causes of this triple threat is animal agriculture. That one industry creates massive amounts of air and water pollution, including anoxia, acidification, and global warming due to animal waste; the pharmaceuticals and bacteria in that waste; toxic fertilizers, pesticides, and herbicides used to grow feed for animals; pollution from slaughter houses; and desertification and deforestation resulting from attempts to force the earth to grow more and more animals and animal feed. And let’s not forget the huge amounts of oil used for agricultural machinery and for transporting animal feed and animals, thus leading to more oil drilling and more oil spills.

An interesting connection to the fishing mega-industry is that many farmed animals are eating fish—insane but true. (Yes, it is hard to imagine a cow eating fish.) And think of the fuel used by the fishing industry and the many toxic spills from the ships themselves. All these massive food industries have lost their moral compass, and one surely needs a compass to navigate a disaster of this magnitude.

As noted in the June-July issue of “Planet Kansas” in the “Prairie Seaweed?” article, Kansas Sierra Club members are taking action at the Blue Vision Summit in Washington D.C. As the article points out, Kansas is connected to the ocean sadly by ribbons of animal waste and agricultural fertilizers, pesticides and herbicides we send down the Mississippi River to contribute to the dead zone in the Gulf. And Kansans use fuel to run vehicles, trucks, and farm machinery causing demand for oil which creates horrific spills. And, of course, our infamous coal burning (which we are all trying hard to limit by preventing the Sunflower plant from being built) further poisons the earth’s waters with mercury and other serious contaminants.

We cannot escape the compelling fact that everything is interconnected. Even from the heart of the country in Kansas, our actions float through the air and downstream to our precious oceans. Since you are reading the “Eating as though the Earth matters” column, that tells me that you are open to what you can do right here in Kansas (or wherever you might be) to bless and heal the earth and put an end to any part you...
might be unwittingly playing in this drama.

In the face of all these destructive forces and dire predictions, we can share the most wonderful news. There is something very, very powerful and, at the same time, absolutely easy, that we all can do right now and every day for the rest of our lives. It is something that has far reaching consequences for healing the earth and stopping the destruction. And it is a way for each one of us to say that by this one action we will not participate, support, or contribute to all this death. Each one of us can take a stand for the Earth and for her beautiful, blue waters and refuse to be part of the poisoning.

Not eating the animals in the seas is, perhaps, the obvious thought that comes to mind as a way to stop the insanity of overfishing. However, as we have learned, the massive engine of animal agriculture on land is literally poisoning the waters of earth and making it nearly uninhabitable. Therefore, not eating land animals or using their milk and eggs furthers the impact and the statement of solidarity that each of us can make. Why is that such wonderful news? What if not enough people follow in our green footsteps in time? That is a possibility, of course. But in the meantime, we all want to do everything we can possibly do. In the end, regardless of what happens, we can say we lived what we believed. We resisted tyranny to the end, as Gandhi taught. We will be able to look at the sea and the land and our children and grandchildren and know we did all we could do to protect them. And, if our actions help bring the life on earth back into balance, what great joy we will share.

We have been wrong. We must change our lives, so that it will be possible to live by the contrary assumption that what is good for the world will be good for us. And that requires that we make the effort to know the world and to learn what is good for it. We must learn to cooperate in its processes, and to yield to its limits. But even more important, we must learn to acknowledge that the creation is full of mystery; we will never fully understand it. We must abandon arrogance and stand in awe. We must recover the sense of the majesty of creation, and the ability to be worshipful in its presence. For I do not doubt that it is only on the condition of humility and reverence before the world that our species will be able to remain in it.

Wendell Berry from The Long Legged House

Recipes to celebrate our dedication to our beautiful oceans

Please create with as many organic, local, fair trade ingredients as possible.

Easy Creamy Chocolate Cheesecake from livevegan.org

**Ingredients:**
- 1 block of Silken Tofu (drained)
- 1 Graham Cracker Pie Crust
- 1 cup chocolate soymilk
- 1/3 cup cocoa powder
- 1/2 cup sugar
- 1/2 cup dark chocolate chips (optional)

**Directions:**
- Cut block of tofu into small chunks and put into the blender.
- Add soymilk, sugar, vanilla extract, and cocoa powder and blend until smooth. If you’d like, add chocolate chips.
- Once all are combined, pour into the pie crust and bake for 35-60 minutes in a preheated oven at 350º or until the top appears solid.
- Chill for 1-2 hrs. before serving. Garnish with soy whip or other non-dairy whipped topping.

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**Fettucine Alfredo from April, 2011, “Veg News magazine,” by Chef Allison Samson**

**Ingredients:**
- 1 cup raw cashews
- 2 tablespoons raw pine nuts
- 1-1/2 cups water
- 4 teaspoons fresh lemon juice
- 1 teaspoon minced garlic
- 1/16 teaspoon ground nutmeg
- 1 1/2 teaspoons salt
- 1/2 teaspoon freshly ground black pepper
- 4 cups cooked fettuccine
- 3 tablespoons freshly minced parsley

**Directions:**
- In a blender or coffee grinder, grind cashews and pine nuts into fine powder. Add water, lemon juice, garlic, nutmeg, and salt. Blend until completely smooth.
- Transfer sauce to a small saucepan over medium heat and whisk as you bring to a boil. Reduce heat to low and simmer for 7 minutes whisking regularly. Stir in pepper.
- Serve over hot pasta and garnish with parsley and freshly ground pepper to taste.

*Submitted by Judy Carman, M.A., Author of Peace to All Beings, co-author of The Missing Peace: The Hidden Power of our Kinship with Animals and owner of a truck and a car powered by used veggie oil. circleofcompassion.org, peacetoolbeings.com.*
Chapter & Group Leaders

Groups are the local body of the Kansas State Chapter

Chapter Executive Committee
Officers, Committee Chairs
*Elected ExCom member, **Appointed ExCom member, ***Group Representative to Chapter, ****Officer/Committee Chair

Yvonne Cather*, Chair, Council Delegate, (316) 522-4741, yvonne.cather@kansas.sierraclub.org
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Carol Barta*, Education Chair, Leader Training Chair, (785) 410-8606, snowsage54@hotmail.com
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Elaine Giessel*, Environmental Justice Chair, Water Quality Chair, (913) 888-8517, elaine.giessel@kansas.sierraclub.org
Bob Sommer*, Environmental Justice Chair, Hospitality Chair, (913) 963-7187, mclaughlin1944@gmail.com
Mike Miller*, Membership Chair, Air Quality Chair, (913) 362-2600, mrmiller1@ mindspring.com
Joe Spease*, Legislative Chair, Energy Chair, (913) 492-2862, spease4kc@evereststk.net
Doug Stecklein*, ExCom Member, 913-393-3934, dougdstuecklein@yahoo.com
Craig Wolfe*, Auction Chair, Communities Chair, Program Chair, (913) 299-4443, info@kansas.sierraclub.org

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Topeka Group
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Bill Griffith****, Energy Chair, (913) 777-8960, bill.griffith@kansas.sierraclub.org
Craig Volland***** CAFO Chair, Trade Chair, Agriculture Chair, Air Quality Chair, (913) 788-7336, volland@kansas.sierraclub.org

Flint Hills Group (Manhattan Area)
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Larry Erikson*, Conservation Chair, (785) 539-4424, lerick@ksu.edu
Virginia Hagin*, Outings Chair, (757) 508-5765, virginia.hagin@us.army.mil

Kanza Group (Kansas City)
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Craig Lubow*, Vice Chair, Conservation Chair, Global Warming Co-Chair, (913) 299-6620, craig.lubow@kansas.sierraclub.org
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Frank Drinkwine*, Fundraising Chair, (913) 385-0385, frank.drinkwine@kansas.sierraclub.org

Wakarusa Group (Lawrence)
Lynne Pettengill, ExCom Member, (785) 331-0625, LynnesPettengill@yahoo.com
Carolyn Binns*, Treasurer, (785) 841-3238, carolynbinns@sunflower.com
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George Brenner****, Conservation Chair, Water Quality Chair, (785) 393-3828, gbrenner@sunflower.com

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Doug Stecklein*, ExCom Member, 913-393-3934, dougdstuecklein@yahoo.com
Craig Wolfe*, Auction Chair, Communities Chair, Program Chair, (913) 299-4443, info@kansas.sierraclub.org
Kanza Group (Kansas City)
August 9.  6:30 pm.
Compressed Air Energy Storage
6:30 pm - Come early, and we will have goodies, along with good conversation followed by our program. Bring your own mug for drinks and for the Ugly Mug Contest.
7:00 pm - Joe Spease, CEO of WindSoHy, Overland Park and Kansas Chapter ExCom, Legislative Chair and Kanza Energy Chair will share his presentation that will be given to the 2011 Kansas Environmental Conference on August 17. Compressed Air Energy Storage (CAES) is a technology vital to the accelerated development of wind and solar energy. Kansas could play a lead role in development of the technology. Learn more about CAES and the company developing it and meet a valuable member of our Kansas Sierra Club. Everyone welcome.
Where - Overland Park Lutheran Church, 7810 W. 79th St. 8 blocks west of Metcalf at Lowell. Park on north side. Directions at www.kansas.sierraclub.org/kanzadirections.htm.
Contact - Craig Wolfe, (913) 299-4443, info@kansas.sierraclub.org

Topeka Group
August 23.  6:00 pm.
Westar WattSaver Program
6:00 pm - “Coffee, Food and Conversation”
7:00 pm - Paula Carvell, Manager, Energy Efficiency/Demand Side Management will provide information about their WattSaver Program. She will also explain other programs they have available and do a Q&A. Everyone welcome.
Where - Unitarian Universalist Fellowship of Topeka, 4775 SW 21st Street.
Contact - Gary Anderson, (785) 246-3229; gjanderson1963@hotmail.com

Southwind Group (Wichita)
September 9.  6:30 pm.
Rafting through the Grand Canyon
6:30 pm - Salad, pizza, & conversation at 6:30
7:30 pm - Rafting through the Grand Canyon—including a helicopter rescue.
Where - Great Plains Nature Center, 29th N at Woodlawn.
Contact - Dave Kirkbride, (316) 522-4741, david.kirkbride@kansas.sierraclub.org

Wakarusa Group (Lawrence)
General Information
Contact Lynate Pettengill (785) 331-0625, LynatePettengill@yahoo.com

Aug - Sept 2011
Below is the combined list of all outings by the Kansas Chapter and Groups. The number in [brackets] indicates the area of the outing as shown on the map. Please contact the outing leader listed after the description by phone or e-mail before attending any of these activities. For trips requiring physical exertion, leaders need to know your ability and condition. Sierra Club policy also requires participants to sign a liability waiver or acknowledgement of risk prior to departing the trailhead.

**Sierra Club Outings**

General public is welcome to participate

Below is the combined list of all outings by the Kansas Chapter and Groups. The number in [brackets] indicates the area of the outing as shown on the map. Please contact the outing leader listed after the description by phone or e-mail before attending any of these activities. For trips requiring physical exertion, leaders need to know your ability and condition. Sierra Club policy also requires participants to sign a liability waiver or acknowledgement of risk prior to departing the trailhead.

[2] Aug 8. 5:30 pm. Social at Caffe’ Modernne
Join us for food, drink, & conversation in the 400 block of Mead in Old Towne. Southwind. Dave Kirkbride, (316) 522-4741, david.kirkbride@kansas.sierraclub.org

Jon Beard, Missouri’s foremost cave restoration specialist, will provide instruction and hands-on training in cave restoration and protection. We will be exploring the largest wild cave in St. Clair County. The Kansas City Area Grotto will demonstrate cave survey techniques and the equipment decontamination procedure mandated by the U.S. Fish and Wildlife Service for all organized wild cavers. This procedure is designed to help stop the spread of White Nose Syndrome. Participants will be given ample time (and a map) to explore this wild cave. Bring headlamps, helmets if you have them, flashlights, kneepads, old clothes, a lunch, snacks, and a thirst for adventure. Kanza.

Join us for a 10-mile hike through a section of the Landahl Park trail system. The trail will be rocky in places. Bring lunch and water. Kanza. Michael Reed, mereed@runbox.com

[2] Sep 12. 5:30 pm. Social at Caffe’ Modernne
Join us for food, drink, & conversation in the 400 block of Mead in Old Towne. Southwind. Dave Kirkbride, (316) 522-4741, david.kirkbride@kansas.sierraclub.org

Learn back packing basics in this 5-hour information filled class. We’ll cover gear from head to foot and everything in between. Class size is limited to 25. This is part 1 of 2 classes, followed by a backpack trip. Participation in both classes ensures a place in the beginning backpack trip. Kanza. Melody Gross, 816 228-6563, wildwoodp@hotmail.com, or Bryan Ohrman, pbandj14@comcast.net

Join us on this out and back ride from Rocheport to Easley on the Katy Trail. We’ll spend time at the Eco-Art festival at Easley before our return ride. Kanza. Claus Wawrzinek, (816) 517-5244, claus@missouri.sierraclub.org

Start the first day of autumn with a backpack trip to the heart of the Ozarks. Solitude will be ours to savor for the weekend and share with the other forest creatures. Participants will be limited by Forest Service regulations to 10 persons. No smoking. Registration must be received by September 10. Kanza. Bob Wilshire, 912-384-6645, rjwilshire@kc.rr.com, or Ben Thiel, ben_thiel@hotmail.com

See why the Ozark National Scenic Riverways is worth saving. We’ll take a full day to go to “Alley”, Two Rivers, “the bluest” Blue Springs, Rocky Falls, and Big Springs. Kanza. Patty Brown, (816) 737-2804, pbbbrn5@sbcglobal.net

This 5-hour class, will offer hands on demonstrations of pack loading, tent pitching, water treatment, cat holes, repair basics. Kanza. Paul Gross, (816) 228-6563, wildwoodp@hotmail.com

[2] Oct 1. 9:00 am. Take a Hike
Take a Hike with the Southwind and the Great Plains Nature Center. Register to win prizes donated by the American Hiking Society as you hike the trails of Chisholm Creek Park, 6232 E 29th St N. For all ages. No pets allowed on the trails. Southwind. Ellie Skokan, (316) 744-0033, ellie_skokan@yahoo.com

Join us for a 10-mile hike along the north shore of Clinton Lake west of Lawrence. Bring lunch and water. Kanza. Michael Reed, mereed@runbox.com

Committee Meetings

Kanza Group  
(Kansas City)

Executive Committee  
Aug 25, Sep 22 - 7:00 pm,  
Steve Baru, (913) 814-0583,  
steve.baru@sierraclub.org

Joint Action Committee  
Aug 25, Sep 22 - 7:00 pm,  
Conservation, legislative, and political  
Craig Lubow, (913) 299-6620,  
craig.lubow@kansas.sierraclub.org

Southwind Group  
(Wichita)

Executive and Fundraising Committee  
Sep 4 - 6:00 pm  
Equity Bank Building  
Dave Kirkbride, (316) 655-8299,  
david.kirkbride@kansas.sierraclub.org

Conservation Committee  
TBA - 6:30 pm  
5825 Memphis St, Bel AireWichita.  
Ellie Skokan, (316) 744-0033  
ellie_skokan@yahoo.com

Wakarusa Group  
(Lawrence)

Executive Committee Planning  
Islamic Center, 1919 Naismith.  
Lynate Pettengill, (785) 331-0625,  
Lynate@sbcglobal.net

Conservation Committee  
George Brenner, (785) 393-3828,  
GBrenner@sunflower.com

Topeka Group, ExCom meets quarterly, TBA.  
Gary Anderson, (785) 246-3229,  
ganderson1963@ksbroadband.net

Energy Committee, TBA,  
Phil Morse (785) 273-3614, p.morse@sbcglobal.net

Kansas Chapter:  
(State), Executive Committee, Oct 15  
Yvonne Cather, (316) 522-4741, yvonne.cather@kansas.sierraclub.org

Bypass the crowds and explore a quiet Ozark stream on a laid-back canoe/kayak float trip. We’ll catch the sunset and see the stars Saturday night from our sandbar campsite.  Kanza.  Ben Thiel, ben_thiel@hotmail.com

Bill Eddy will lead us on his namesake trail that has been partially re-routed and extended because of land swaps with a developer. It has been laid out, partially cleared, but more work needs to be done. Leveling, improving a stream ford, and always brush cutting.  Kanza.  Eileen McManus, (816) 523-7823, eileen4250@sbcglobal.net

We’ll spend three nights on the trail in the rugged backcountry of Arkansas. Early fall foliage, scenic vistas, crisp mornings, and perhaps the calls of owls or coyotes will reward our efforts. Group size limited to 10 persons. Please register by October 1. No smoking.  Kanza.  Bob Wilshire, (913) 384-6645, rjwilshire@kc.rr.com

Apply what you learned in the backpacking classes. The trip will focus on applying the knowledge you have acquired. We will be applying map and compass skills.  Kanza.  John Haynes 913-248-1259, jhaynes5018@everestkc.net or Paul Gross, 816-228-6563, wildwoodp@hotmail.com

[1]  Nov 5.  Perry Lake Trail Maintenance, Perry, KS  
Join us on the 20th anniversary of our first trail maintenance trip to Perry Lake! Bring lunch, water, work gloves, and if you have them, bow saws and/or loppers. Anniversary cake optional.  Kanza.  Steve Hassler, (913) 707-3296, hassler@planetkc.com

A collaborative effort between Southwind and the Great Plains Nature Center will take place on Saturday, November 19th, when a hike and campfire program will be offered at 6:00 pm. Join us for a staff-led hike through Chisholm Creek Park, followed by s’mores and stories around the campfire. More on this in the next edition of Planet Kansas. Be sure to mark the dates on your calendar and make plans to hit the trails and enjoy nature with us!  Southwind.  Ellie Skokan, (316) 744-0033, ellie_skokan@yahoo.com
Calendar of Events

Summary of all Kansas Chapter Events

Below is a listing of all General Meetings (GM), Outings (Out), and Committee Meetings (CM) for the Kansas Chapter and Groups. For specific information, see General Meetings page 17 Outings page 18, and Committee Meetings page 19. For the latest update on events, go to www.kansas.sierraclub.org/EventsSearch.htm.

Out Aug 8. 5:30 pm. Social at Caffe’ Modernne. Southwind. Dave Kirkbride, (316) 522-4741, david.kirkbride@kansas.sierraclub.org
GM Aug 23. 6:00 pm. Westar WattSaver Pgm. Topeka. Gary Anderson, (785) 246-3229; gjanderson1963@hotmail.com
CM Aug 25. 7:00 pm. Kanza ExCom meeting. Kanza. Bob Sommer, (913) 681-5211, rsommer@kc.rr.com
CM Aug 25. 7:00 pm. Conservation and Joint Action Committee. Kanza. Craig Lubow, (913) 299-6620, craig.lubow@kansas.sierraclub.org
CM Sep 4. 6:00 pm. Southwing ExCom Meeting. Southwind. Dave Kirkbride, (316) 522-4741, david.kirkbride@kansas.sierraclub.org
GM Sep 9. 6:30 pm. Rafting through the Grand Canyon. Southwind.
Dave Kirkbride, (316) 522-4741, david.kirkbride@kansas.sierraclub.org
Out Sep 10. Landahl Park Day Hike, Blue Springs, MO. Kanza. Michael Reed, mereed@runbox.com
Out Sep 12. 5:30 pm. Social at Caffe’ Moderne. Southwind. Dave Kirkbride, (316) 522-4741, david.kirkbride@kansas.sierraclub.org
GM Sep 13. 6:30 pm. Water Availability and the Future of Kansas. Kanza. Craig Wolfe, (913) 299-4443, info@kansas.sierraclub.org
Out Sep 17-18. Katy Trail Bike Ride, Rocheport, MO. Kanza. Claus Wawrzinek, (816) 517-5244, claus@missouri.sierraclub.org
Out Sep 17. Beginning Backpack Class Series, Part 1, Kansas City, MO. Kanza. Melody Gross, (816) 228-6563, wildwoodp@hotmail.com, or Bryan Ohrman, pbandj14@comcast.net
CM Sep 22. 7:00 pm. Conservation and Joint Action Committee. Kanza. Craig Lubow, (913) 299-6620, craig.lubow@kansas.sierraclub.org
Out Sep 23-25. Hercules Glades Wilderness Backpack, Taney County MO. Kanza. Bob Wilshire, 912-384-6645, rjwilshire@kc.rr.com, or Ben Thiel, ben_thiel@hotmail.com
Out Sep 24. Ozark Springs Tour, Eminence, MO. Kanza. Patty Brown, (816) 737-2804, pbbrn5@sbcglobal.net
GM Sep 27. 6:00 pm. Konza Prairie. Topeka. Gary Anderson, (785) 246-3229; gjanderson1963@hotmail.com
GM Sep 27. 6:00 pm. Compressed Air Energy Storage. Topeka. Gary Anderson, (785) 246-3229; gjanderson1963@hotmail.com
Out Oct 1. 9:00 am. Take a Hike. Southwind. Ellie Skokan, (316) 744-0033, ellie_skokan@yahoo.com
Out Oct 1. Beginning Backpack Class Series, Part 2, Kansas City, MO. Kanza. Paul Gross, (816) 228-6563, wildwoodp@hotmail.com
Out Oct 1. Clinton Lake Day Hike. Kanza. Michael Reed, mereed@runbox.com
CM Oct 15. 9:15 am. Chapter ExCom Meeting. Chapter. Yvonne Cather, (316) 522-4741, yvonne.cather@kansas.sierraclub.org
Out Oct 29-30. Car camp, Flint Hills, Tall Grass National Preserve, Strong City, KS. Kanza. Renee Andriani, (913) 488-4445, randri@kc.rr.com