

# ECO FORUM

NEWSLETTER OF THE SOUTH DAKOTA RESOURCES COALITION

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## Legislation to Create First National Grassland Wilderness in the U.S.

In May Senator Tim Johnson introduced the Tony Dean Cheyenne River Valley Conservation Act of 2010, which would designate the Indian Creek, Red Shirt, and Chalk Hills areas of the Buffalo Gap National Grassland as part of the National Wilderness Preservation System. Senator Johnson named the bill after the late Tony Dean, nationally known outdoorsman and conservationist.

Windswept tablelands, sheer cliffs, stark buttes and waving prairie grasses are part of what makes South Dakota unique. Designating some of these public lands as wilderness will ensure they remain wild, while allowing hunting, hiking, camping, rock collecting, horseback riding, access for people with disabilities, and much more. U.S. Forest Service wilderness designation also provides legal protections for cattle grazing to continue, which will help safeguard South Dakota's ranching heritage. Once enacted, this will be the very first national grassland in the National Wilderness Preservation System.

### TAKE ACTION NOW!

**Tell South Dakota's two senators that you support this legislation. See contact info on the back panel.**

*The South Dakota Wild Grassland greatly appreciates your ongoing support. It makes all the difference. Thank you!*

For more information visit [www.sdwildgrassland.org](http://www.sdwildgrassland.org)

"I have listened to many South Dakotans. The feedback from ranchers, hunters, conservationists, off-road vehicle groups and others has helped me produce balanced, common-sense legislation," said Senator Johnson.

Johnson's version of the bill keeps the six-mile-long Indian Creek Road open by excluding it from the wilderness boundaries. That was key, he said, for ranchers, hunters, horseback riders and nature lovers.

"Senator Johnson really did his homework on this," said Cheryl Warren, manager of the SD Wild Grassland Coalition. "You can't say he didn't reach out to everyone, including those who were against it. But in the end, this is an excellent multiple use management for these wonderful lands."

The Buffalo Gap National Grasslands encompasses 591,000 acres in southwestern South Dakota.

Information also obtained from *Sioux Falls Argus Leader* May 6, 2010

## Miller Wins Edie Scholarship

SDRC is happy to award this year's Esther Edie Environmental Scholarship to Kayla Miller, a microbiology major at SDSU.

Miller is an outstanding student in a challenging major with strong potential to obtain a PhD. In addition, Miller finds time to be president of the SDSU Sierra Club chapter, and has led their campaign to begin to replace the polluting campus coal plant with a cleaner source of energy (see separate article). She has also led their campaign to begin composting the 750 pounds of food waste generated daily on campus. She has worked with Dakota Rural Action on their project to make locally grown foods more easily available to South Dakotans. She has gained grant writing experience applying for a grant with the Clinton Global Initiative to begin financing the campus composting project.

We try to find a student with potential to become an environmental activist, but this year we were fortunate to find a student who already *is* an environmental activist. (*continued on p. 2*)

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### In This Issue:

SD Good for Grouse.....	2
Top 10: No Hyperion!.....	3
Say No to Coal Ash.....	6
Miller School Gets Wind.....	7
Sunny Drive = Skin Cancer?.....	8
Replace SDSU Coal Plant.....	9
Buy Your Edie Raffle Ticket!.....	9
Blow Away Wind Power Myths10	

**Scholarship (cont. from p. 1):** Kayla Miller grew up in Sioux Falls, and later, Worthing, where her family moved so that Kayla could have a horse. Miller owns a



**Kayla Miller, 2010 Esther Edie Scholarship Recipient**

Thoroughbred-Percheron cross and has enjoyed competing in dressage. In addition to horseback riding, she is an avid kayaker.

Miller says her interest in protecting the environment was sparked by her advanced placement environmental science course in high school taught by Chris Skinner. She began

her college education at Northland College in Wisconsin as an environmental science major. She transferred to SDSU to be closer to family, and save money. Miller chose microbiology as her major at SDSU to get the best in depth scientific background to pursue her environmental interest.

This summer, Miller is working at the Cedar Creek Ecosystem Science Reserve of the University of Minnesota. She is working as an intern on long term experiments that study the effects of drought, increased carbon dioxide and nitrogen levels on biodiversity and plants. She will also work on an independent project to study changes in soil bacteria when exposed to higher temperatures, a situation that could occur with climate change.

Miller plans to go to graduate school in an area that will enable her to work with environmental issues. She hopes to either work for a governmental agency or stay in academia and do research and teach.

### **South Dakota Leads in Sage-Grouse Habitat**

Two federal agencies, the National Resources Conservation Service and the U.S Fish and Wildlife Service, have signed an agreement to promote, protect and preserve greater sage-grouse habitat and ecosystems to help populations of the bird across much of its 11-state range.

Chris Hesla with the *South Dakota Wildlife Federation* says South Dakota has the right environment for rebuilding sage-grouse numbers. (*continued on p. 3*)

### **Personal Statement: Kayla Miller**

Ever since I learned the term for environmental science, I knew that it was something I was already in love with. Growing up, I spent most of my time outdoors, and once I started high school, I discovered my passion for science. It was a natural fit for me to pursue environmental science for a career.

Right now I'm attending South Dakota State University and pursuing a degree in microbiology. After I obtain my undergraduate degree, I plan to continue on to graduate school for environmental science. For my future career goals, I am thinking of two different paths. One of the things I would like to do is to teach at a university and do research in my field. If not that, then I would like to work for a governmental agency like the Environmental Protection Agency, National Parks Service, or the SD Department of Environment and Natural Resources. These are the areas where I believe I can offer the most help to the environment and those who will continue to protect it.

My first year of undergraduate school was spent in Wisconsin at Northland College. I was pursuing environmental science there and when I transferred to SDSU, I switched to Microbiology because SDSU didn't have an environmental science program. While microbiology might not be the typical path towards environmental science, I consider environmental science to be an interdisciplinary field and a more varied background would be beneficial for success in this field. Consequently, I have tried to vary education accordingly and instead of only microbiology courses, I have also taken soils, ethnobotany and environmental chemistry. Besides coursework, I have worked on two undergraduate research projects that both work with Geographic Information Systems (GIS). These educational experiences are essential with a career plan of graduate school and beyond.

## The Top Ten Reasons the Hyperion Refinery Will Not (and Should Not) Be Built

By Dean Spader, Vermillion SD

**10** The earth's temperature is like our body temperature—a one degree rise is unpleasant, a two degree becomes debilitating, and a six degree rise can be fatal. The earth's temperature will soon exceed two degrees higher than the averages of the past 400 years, and will likely rise another 2.5-to-10.4 degrees by 2050. (Sachs, p. 86, [www.earth-policy.org](http://www.earth-policy.org))

We are entering the debilitating zone of 2 degrees and headed toward the fatal zone of 6 degree rises. The media is only beginning to report the debilitating events that are occurring. *Soon we will get really sick.* As the earth's sickness rises, the public outcry for a cure to these debilitating green house gases will force politicians to action. Carbon producers are the new agents of global sickness.

This refinery will produce massive amounts of carbon. This refinery "will have the greatest amount of onsite direct CO<sub>2</sub> emissions per barrel of any refinery in the United States." (FOF 70 and 71, Citizens

**Sage Grouse (cont. from p. 2):** "We still have a lot of open lands out in northwestern South Dakota," says Hesla. "If we can keep the habitat, the animals and the sage grouse will thrive in it."

The federal agencies will work with private land owners and states to restore and develop sage-brush areas. The U.S. Department of Agriculture will provide \$16 million to livestock producers to reduce threats to the birds like disease and invasive species.

Hesla says the partnership is important to prevent the conversion of more acres from sage-grouse habitat to farm fields.

"We're losing more and more to the push for wheat and soybeans and everything, and the drought tolerance is allowing land that has been grass for years, and sage, you know, natural habitat, to be plowed under and planted."

The South Dakota Game, Fish and Parks Department has allowed only two-day hunting seasons for sage grouse in the past few years, with an average of 18 birds being harvested. Western South Dakota is considered the eastern end of the sage-grouse range.

Source: SD Public News Service, April 14, 2010

Brief) Clearly, this refinery will be tagged as a major agent of global sickness.

**9** The "best estimate" is that carbon dioxide will rise to 560ppm by 2050, and global temperatures will rise 5.4 degrees (a near-fatal level where catastrophes will be common). Global warming is rising much faster than expected. There are now "around twenty large-scale climate models used by scientific groups." (Sachs, p. 91)

Three numbers are most relevant to understand climate change: 280ppm (the average carbon dioxide over the past 200,000 years), 390ppm (the present amount), and 450ppm (the point at which major catastrophes begin to occur). Minor catastrophes are already occurring. (McKibben, Oct. 07 *National Geographic*, p.34)

Worse yet, the amount of carbon dioxide being released into the environment is increasing rapidly. Presently, about 37 billion tons are released each year. Half of that is absorbed by the oceans, forests, and other plants known as "carbon sinks," and the other half stays in the atmosphere. Thus, the speed of warming is increasing—because like violence, warming begets more warming (due to numerous "positive feedback" events that make the effects worse as the heat gets higher. For example, the release of methane—which is 11 times worse than carbon dioxide—is increasing as the frozen peat in Canada and the Arctic melts).

To prevent this doubling, carbon emissions will either be taxed heavily to avoid catastrophe, or regulated heavily by cap and trade. This refinery will not be given free air to pollute.

**8** South Dakota could bake. We are one of five states where the temperature is predicted to rise more than 10 degrees. Temperatures could rise higher here than in 45 other states. (*continued on p. 4*)

**No Hyperion (cont. from p. 3):** Climate models show that the cool 2009 Midwest summer was a global exception, and this past winter was the hottest on record globally. Now South Dakotans are becoming scared of the direct effects of climate change on us. The refinery is facing many more hostile citizens and leaders. No business and no employees like to operate in a “toxic” psychological environment. The welcome signs for this refinery are being replaced by doubt, skepticism, anger, and uncertainty.

**7** When Hyperion applies for the federal 404 permit under the Clean Water Act, an environmental impact statement (EIS) will be required, and the EIS will either stop the refinery completely, or make it prohibitively expensive to build.

Hyperion obtained early commitments from leaders by promising the “greenest refinery in America” (Governor Rounds letter). Thus our leaders jumped on the “economic development” bandwagon like innocent children who are given candy laced with hidden arsenic. The EIS will reveal the arsenic in the candy and allow leaders to save face and refuse the candy.

Or, since most leaders find it too humiliating to admit their mistake, the courts—like parents who must show children how to avoid hasty mistakes—will also help by reversing the decisions of state boards for procedural mistakes.

**6** Only 10% of the earth’s land surface is cropland. No advanced civilization destroys the source of its food, and this refinery will destroy 6000 acres of the best cropland in the world. Since 1950, grainland has dropped from ½ acre per person to ¼ acre per person. Soon, Americans will need to give up meat-eating for lack of cropland because it takes 1.3 acres to feed a meat-eater, and only 1/7<sup>th</sup> of an acre to feed a plant-based eater. (Brown, pp. 93 and 117)

It takes ten times more land to feed a meat-eater than it takes to feed a plant-based eater (vegetarian). Fortunately, of the six billion people on this planet, only one billion eat meat. Another four billion eat plant-based diets, and the

remaining one billion are malnourished or starving. The world’s population will increase to nine billion by 2050, and the decisions by city dwellers—like Houston-based Hyperion’s decision to build this refinery—are destroying cropland to produce fuel, not food.

Within the next few years, the global masses will demand food. Since scientific studies already show that plant-based diets are healthier, Americans will no longer be able to justify eating meat, and hungry humans all over the world will protest the use of cropland to produce fuel.

**5** Worse yet, our cropland has been depleted of key nutrients and minerals. Due to misuse of our soil and a defective food system, Americans consume too many calories and too few nutrients. Americans suffer from increasing obesity, overweight, and malnutrition that are causing widespread chronic diseases. Our health, not our health system, is broken.

Our health is broken because our food packs too many calories and lacks nutrition. “In the past 50 years, chemo-agricultural farming has depleted the soil’s original minerals.” (Dr. Bill Misner, PhD) US Department of Agriculture publications over the past 25 years show that “the average nutritional content of vegetables has declined...about 25 to 33 percent across the board—all vegetables, all vitamins and minerals.” (Solomon, p.24)

Americans are demanding more organic, more local, and more nutritious food. This refinery will not only destroy the 6000 acres on which it sits, but will also spread 1000’s of tons of pollutants on cropland all around it. Needing more nutritious food, Americans are getting more polluted and less nutritious food.

**4** Recent studies from Texas using DIAL technology show that refineries release at least three times more volatile organic compounds (VOCs) than they report. Sweden has required DIAL technology since 1995 for all its refineries. Texas used DIAL to show that actual VOC emissions are at least three times “estimated” emissions (Cuclis; *cont.*, p. 5).

**No Hyperion (cont. from p. 5):** Once the EPA requires DIAL technology to report *actual* emissions, this refinery will not be able to use estimates to under-report its emissions.

**3 “The increase of fuel economy of one mile per gallon for passenger vehicles in the US will reduce fuel consumption by more than all alternative fuels and replacement fuels combined.” (Reitze, p. 10769 of the 2006 *Environmental Law Review*)**

Increasing miles-per-gallon far exceeds alternative fuels as a solution to vehicle pollution. Chevrolet announced that its Chevy Volt will obtain 230 miles per gallon. The present 50 mpg of the Toyota Prius will be wasteful and outdated in just a few years.

In addition to more efficient cars, consumers will demand less polluting cars. A gallon of gas “adds a whopping 19.6 pounds of CO<sub>2</sub> to the atmosphere.” (*National Geographic*, Mar. 09, p. 67) Individuals will soon realize we also are agents of global sickness, and demand for gasoline will plummet. No oil company would build a refinery with a 50-year life expectancy when technological breakthroughs allow shifts to non-fossil fuel transportation.

**2 Demand for oil has already decreased 6 percent in this recession. Citizen awareness of global sickness increased rapidly. Soon, the need for refineries processing the dirty tar sands will be eliminated.**

As demand drops during this recession, oil companies are cancelling the construction of new or expanded refineries. This 2-3 year drop in demand is allowing time for breakthroughs in car manufacturing, and more importantly, major rises in consumer demands for higher mile-per-gallon cars.

“Hybrid cars offer twice the miles per gallon of conventional cars, and plug-in hybrids may soon offer four times the miles per gallon”, or an average of 100 miles per gallon. (Sacks, p.104) Electrical hybrids will allow us to save oil for farming and construction jobs that need more power, while fueling our cars on wind and sun power.

**1 Plug-in hybrids rely on electricity. Wind and solar production of electricity will replace fossil fuels much more rapidly than anyone predicted.**

Thus, even if built, this refinery will be closed down quickly for lack of demand and customers. Last month, Ottertail reversed its decision to build the Big Stone II coal plant. For these 10 reasons and many more, Hyperion will reverse its decision to build this refinery and will release all land options. It will be the right and best decision to make.

Note: Dean Spader is a member of the Living River Group of the SD Sierra Club. His article is reprinted from the Jan/Feb/March 2010 issue of *Pines & Prairies*, newsletter of SD Sierra Club.

#### Spader's Recommended Reading:

Jeffrey Sachs, *Common Wealth: Economics for a Crowded Planet* (2008)

Lester Brown, *Plan B 3.0: Mobilizing To Save Civilization* (2008)

James Hanson, *Storms of Our Grandchildren* (2009)

Patrick Holford, *The Optimum Nutrition Bible* (2004)

Joe Smiley and Grace Gershuny, *The Soul of Soil* (1999)

*National Geographic*, Oct. 2007, p. 33-37; Mar. 09, pp 42-80

## Career in Ocean Law Puts Rapid City Attorney in the Middle of BP Spill Debate



Rapid City attorney Suzanne Martley has a unique perspective on the oil spilling from British Petroleum's Deep Horizon oil rig in the Gulf of Mexico. She is an expert in marine law and sustainable fisheries. Martley sat down recently with Sam Hurst, publisher of *The Dakota Day*, to share her insights on the effectiveness of federal law and regulation, and the future of the Gulf. Read the full interview in *The Dakota Day* online:

[http://www.dakotaday.com/index.php?option=com\\_content&view=article&id=135:a-career-in-ocean-law-puts-rapid-city-attorney-in-the-middle-of-the-spill-debate&catid=1:column-two-catigory&Itemid=19](http://www.dakotaday.com/index.php?option=com_content&view=article&id=135:a-career-in-ocean-law-puts-rapid-city-attorney-in-the-middle-of-the-spill-debate&catid=1:column-two-catigory&Itemid=19)

## SDRC Calls on President to Issue Coal Ash Waste Rules

Note: SDRC, along with other state and national organizations, signed onto this letter to President Obama.

Dear Mr. President:

On behalf of our members and supporters, we urge you to protect communities across this nation from the widespread mismanagement of coal combustion waste that endangers public health and the environment – and for which there are no current federal regulations.

Following the disastrous spill of more than 1 billion gallons of coal ash from the Tennessee Valley Authority's Kingston Fossil Plant in December 2008, 109 directors of environmental groups called upon EPA Administrator Lisa Jackson to develop federally enforceable standards for regulating coal combustion waste. Shortly thereafter, Administrator Jackson pledged to publish a regulatory proposal by

*Industry generates 136 million tons of dangerous coal ash waste each year.*

December 2009. In keeping with her commitment, Administrator Jackson submitted a draft coal ash rule to the White House Office of Management and Budget (OMB) in October 2009—but over five months later, this rule remains under review at OMB. SDRC, along

with other public interest groups, ask you to side with the public and sound science to ensure a rule that protects people and the environment is released in April.

Continued delay in the issuance of federal regulations for the disposal of the 136 million tons of toxic coal combustion waste generated annually is dangerous and unacceptable. Unmitigated harm, often to poor and minority communities, continues to threaten the lives and environment of millions of Americans. Communities near America's thousands of coal ash dumps are threatened with poisoned drinking water, polluted waterways, and life-threatening failures of decades-old dams. The failure to act makes another catastrophic failure, like the disaster in Kingston, ever more likely, and it makes the poisoning of additional water sources a near certainty.

Releasing the draft rule would trigger the public process of rulemaking, thereby ensuring a fair and open process in which all stakeholders have an equal opportunity to address the complexities of the proposed rule. Until the draft rule is released for public comment, the debate occurs almost entirely behind closed doors. Industry groups that oppose mandatory federal standards have had more than 30 meetings with OMB on this rule – more than ever before on any single topic. These groups continue to present unfounded claims of power plant closures and exaggerated cost estimates as “fact,” thereby fomenting widespread but unwarranted fear of EPA regulations.

One of the issues industry is using to slow down the rulemaking process is the argument that the regulation of coal combustion waste will place a stigma on the recycling of fly ash. We believe this argument is overstated. We do not expect the reuse of fly ash to decrease if the disposal of ash is regulated as hazardous waste. On the contrary, the hazardous waste requirements will provide companies an incentive to find alternative uses for fly ash. However, if the coal ash is not going to be reused or recycled, then it needs to be disposed of following tailored hazardous waste rules.

*Coal ash includes arsenic, chromium, selenium, and other toxic chemicals.*

The EPA's latest scientific findings lend urgency to the promulgation of federally enforceable standards. New EPA leach tests, specifically designed for coal ash, reveal that toxic chemicals such as arsenic, chromium and selenium, can leak from coal combustion waste in concentrations far exceeding the threshold that the EPA uses to identify hazardous waste. The EPA also found that the cancer risk for children exposed to arsenic in drinking water from unlined ash ponds is as high as 1 in 50, which is 2,000 times the EPA's goal of reducing cancer risk to 1 in 100,000 individuals. (*continued on p. 7*)

**Coal Ash Letter (cont. from p. 6):** Further, leading coal combustion waste (CCW) scientists, with more than 100 years of combined research experience on the environmental fate and toxic impacts of coal ash, recommend federally enforceable standards. Drs. E. Dennis Lemly and Christopher Rowe, among others, recently submitted a letter to OMB stating "Make no mistake about it, CCW is a deadly poison to fish and wildlife, and a threat to human health when improperly managed." They conclude:

Some of the most destructive and pressing environmental problems with CCW are not 'in the distant past' but are taking place NOW using 'state approved' disposal practices. Threats and impacts are not being addressed by the coal power industry and they will not go away. They will be a recurring, escalating problem unless adequate regulatory controls are put in place. State efforts are inadequate....federal regulatory oversight is necessary. Experience shows that CCW's will need to carry a hazardous waste 'C' designation if they are to be regulated and disposed in a manner that will afford adequate protection to fish and wildlife, as well as humankind.

We urge you to consider the EPA's latest scientific findings and the recommendations of scientific experts and put an end to further delay.

Thus the South Dakota Resources Coalition, along with other public interest organizations, representing several million citizens, respectfully ask the Administration to release the proposed coal ash rule for public comment this month and to ensure that the rule proposes federally enforceable standards that will protect all United States citizens and their environment from a truly toxic substance.

## Miller School Embarks on Wind-Blown Education Path

by Ruth A. Moller

One of South Dakota's great natural resources-wind-will be put to use in the Miller school system. By October, a small wind turbine should be installed on Miller Junior-Senior High grounds, as part of the Wind for Schools project.

High school science instructor Andrea Fiala explained that she attended a science and math teachers' conference where the Wind for Schools project was explained.

Wind Powering America and the National Renewable Energy Laboratory (NREL) launched the Wind for Schools project in 2005 with a pilot project in Colorado that resulted in one small wind turbine installed in Walsenburg, wind energy curriculum development, and a great deal of

enthusiasm for the Wind for Schools project's potential.

Wind for Schools projects are currently supported in six Great Plains states (Colorado, Idaho, Kansas, Montana, Nebraska and South Dakota). Presently in South Dakota, there are 12 Wind for Schools turbines either up and running, or will be (including Miller) at local schools, and one at South Dakota State University.

Fiala returned from the conference, enthusiastic about wind energy, and talked to Superintendent Mike Ruth about applying for a grant for a turbine to be installed at Miller. The board of the Miller School District agreed, and Fiala made the application. She was informed in February that Miller School was approved.

A \$10,000 wind energy kit includes the SkyStream unit, a tower, disconnect boxes at the base of the turbine and at the

school, and an interconnection to the school's electrical system.

"It's exciting," Fiala said. "The school's cost will be about \$4,000. The City of Miller is contributing labor to erect the turbine, and the rest of the expense will be covered by the grant."

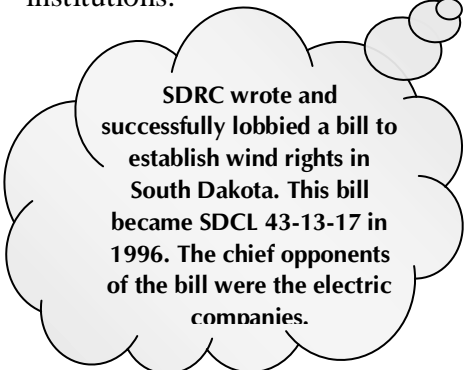
BP Wind Energy, which spearheaded the Titan Wind Farm at Ree Heights, had asked On Hand Development Corporation if there were any community projects they could support. On Hand director Joe Fiala says he spoke at Titan's grand opening about developing career paths toward the wind industry. "BP decided to put their monetary support toward the Wind for Schools program, which in turn helps Miller School and its turbine."

Miller School will install a SkyStream 3.7, 2.4-kW wind turbine. (*continued on p. 8*)

**Miller Wind (cont. from p. 7):**

The turbine can produce enough electricity to power a small house, Andrea Fiala said. "It will be generating electricity which will be used for part of the school's energy needs, but primarily it will be used for science observations and wind-related class work." The turbine will have six-foot blades, and will stand 60 or 70 feet tall.

According to the Wind for Schools Website, "The general approach of the Wind for Schools project is to install small wind turbines at rural elementary and secondary schools (hosts) while developing Wind Application Centers at higher education institutions.



SDRC wrote and successfully lobbied a bill to establish wind rights in South Dakota. This bill became SDCL 43-13-17 in 1996. The chief opponents of the bill were the electric companies.

"The focus of the Wind for Schools project is to implement wind technology primarily for educational purposes. With education as the primary driver, the Wind for Schools system must 1) be easy to implement and interconnect to the school's electrical grid, 2) be small enough so that all of the system generation will be used at the school, and 3) have integrated data logging to provide data for use in the classroom."

In addition to installing small wind systems at "host" schools, at the higher education level, the program is aimed at educating students in wind energy applications with a focus on developing a workforce for the future.

Fiala says today's wind energy development is basically a young, growing industry. Because of the close proximity of the Titan project near Ree Heights, along with turbines near Highmore and Wessington Springs, Miller-area residents

have a heightened interest in wind energy.

[On] April 21, the Miller School hosted a Wind Energy for Schools workshop that drew teachers from across the state, including Yankton, Vermillion and Douglas. Fiala and Pam Van Zee attended from Miller. Steven Wegman, South Dakota Wind Energy Association, was in charge of the program. Participants were involved in several hands-on wind energy applications, and constructed a model-sized wind turbine from PVC pipe that can be used in the classroom.

There is definite interest in education circles, Fiala says. And she is delighted that Miller students will be able to learn firsthand about the science and technology behind wind energy. They will learn that wind is an important energy source, and that wind power makes a good neighbor.

Reprinted from *The Miller Press* April 28, 2010

## Surprising Skin Cancer Risk: Too Much Driving

Long hours behind the wheel may increase the risk of skin cancer, according to a new study. Facial skin cancers were found to occur more often on the left-side—the side next to the window while driving—among a group of about 1,050 patients in St. Louis. While the results show only correlation, not causation and have yet to be replicated in a larger population, they alert us to potentially harmful UV ray exposure through car windows.

"Drivers need to be aware of the amount of sun exposure they receive behind the wheel," said study researcher Dr. Scott Fosko, chair of dermatology at Saint Louis University School of Medicine. "The cumulative effect of being exposed to the sun builds up over many years."

Fosko recommends wearing sunscreen that blocks both UVA and UVB rays (which should be on the label) every day to avoid skin cancer, premature wrinkling, and aging of the skin.

Windows with tinted glass and UV filters also helps reduce the amount of UVA rays that hit your skin. In addition to sunscreen, Fosko recommends drivers to wear protective clothing whenever possible.

"Professional drivers learn to wear proper safety equipment be it gloves, steel-toed boots or safety glasses when appropriate," Fosko said. "Sunscreen should be added to the list. An ounce of sunscreen applied as prevention on the road can be worth a lot of time and expense parked in a doctor's office later on."

Source: *Environmental News Network*, May 7, 2010

## SDSU Must Transition from Coal Plant Toward Clean Energy

By Kayla Miller

Note: Miller is SDRC's 2010 Edie Scholarship winner (see page 1). This essay appeared as a guest column in the *South Dakota State University Collegian*, March 24, 2010

SDSU is making great strides toward becoming a leading university in this region. Impressive construction on our campus, like the new dorms and Innovation Campus, shows that we are building for the future. Moving to Division I athletics is ambitious and rewarding, and to accommodate the needs of Division I football, a feasibility study is underway to explore how to improve and expand Coughlin Alumni Stadium.

All the progress happening at SDSU will propel our university to fill an increasingly important role in helping our state, the nation and the world. It is exciting to be part of the university community as our university pursues such a role. We need to look at the total SDSU picture if we truly are to reach for and attain greatness.

A contradiction in our aspirations to realize significant progress is the campus coal plant. Having a coal-burning [heating] plant on our campus is inconsistent with the enlightened thinking and standards that define a progressive 21st century center of higher learning and

cutting edge research. Coal is a highly outdated and polluting energy source.

Why must the SDSU coal plant be retired? First and foremost, coal pollutes, and it is unhealthy. Each and every step of coal use negatively impacts human health. Mining, transportation, washing, combustion and the deposition of coal wastes all contribute to pollution and diseases affecting portions of the population. These diseases include asthma, lung cancer, heart disease and stroke.

Burning coal is ugly and toxic, and it produces undesirable emissions, including mercury and large quantities of carbon dioxide, as well as prodigious quantities of dirty waste. Health experts estimate that 23,600 U.S. deaths each year are caused by coal plant air pollution.

The SDSU coal plant uses about 8,000 tons of coal each year. The coal comes from Appalachia and is shipped by barge up the Mississippi to Minnesota and then by truck to our campus.

Coal mining leads all U.S. industries in fatal injuries. But on-site, work-related injuries are only part of the risk to those working in coal mining. (*continued on p. 10*)

## SDRC Esther Edie Scholarship Fund Raffle Sale

SDRC board member Charlie Johnson has donated a quarter of beef from his farm near Madison to be given away at the SDRC annual meeting this fall. Johnson raises this beef on all organic grains and hay, no commercial feed, no hormones, and no antibiotics. SDRC will conduct a raffle sale from now until this fall. Proceeds will be directed to the Esther Edie environmental scholarship fund. There will only be 100 tickets printed and the cost is \$10/ticket. This is a great opportunity to provide a donation to the scholarship fund while at the same time having an opportunity to place some wholesome locally grown beef into a worthy household.

For those who renew their membership in 2010, SDRC is providing an opportunity to purchase your ticket(s) at the time of your membership renewal. If you have no need for beef or feel you do not have storage for it, still please consider a ticket purchase regardless. You can place the name of a relative, neighbor, or a worthy cause on your ticket receipt. Last year's winner, Scott Parsley of Madison, donated his prize to the local food pantry. Remember this ticket purchase is for a most worthy cause—a contribution to the legacy and memory of Esther Edie.

Again, only 100 tickets will be sold. Tickets can be sold to non-members also, so get to the front of the line and purchase yours today. Buy one for a friend or a worthy cause. Consider making your SDRC membership renewal and raffle purchase at the same time. Don't forget our youth and students as SDRC attempts to recognize their contributions to South Dakota. They are South Dakota's number one resource.

**SDSU Coal (cont. from p. 9):** From 1992 to 2002, 12,000 coal miners died from black lung disease.

Coal is being phased out across the nation. More than 120 coal plant proposals have been canceled in just the last several years. Coal plants are being retired as improved energy conservation techniques and cleaner energy sources become available. Why can't the energy solutions being created by SDSU engineers and the Innovation Campus be implemented on campus? The energy field offers unlimited opportunities for research and for making positive contributions to our world. SDSU can become a leader in clean, renewable energy. The university must start by figuring out a better way than coal to provide heat and hot water to its own campus.

We're online!  
Log in:  
[sdrworks.org](http://sdrworks.org)

If SDSU's leadership is willing to invest time and creativity to undertake a feasibility study about how to improve our football stadium, certainly they can invest time and creativity to investigate how to improve energy sources serving the campus.

Our ultimate goal should not be to retain and protect the coal plant. It must be aimed at figuring out how to transition away from the coal plant and toward the use of clean, renewable energy sources. This is not an unreasonable objective. Instead of a challenge, we must view this as an opportunity — an opportunity to promote healthier, more sustainable energy. An opportunity to continue to be a leader in the region. It can be an exciting and beneficial process that an institution like ours eagerly embraces.

Sometimes, achieving progress means dramatic change is necessary. Some people may reject the plan to change the football stadium, but the more common understanding is that change to this campus landmark is necessary because times have changed, and needs and expectations are different. In the case of campus coal, change is also important and necessary. While the coal plant is no landmark, it has its advocates. They must come to understand that we can do better than coal. Let's commit ourselves to using energy sources that match the progressive ambitions of our university.

## Demystifying Common Myths of Wind Power

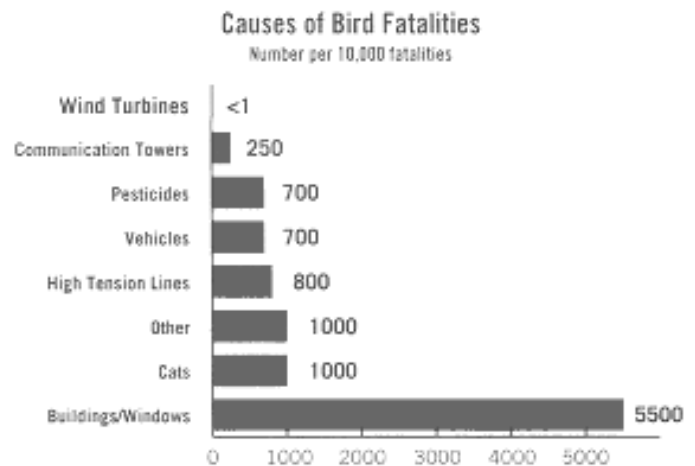
by Josh Kennedy

With all the hoopla going around for and against wind farms going up all over the US, it is important to weigh in with a little fact checking on "not-in-my-backyard" (NIMBY) claims..

I'll start by saying that I am first and foremost pro-environment. If "evidence" is ever found during an environmental impact study that a wind farm will harm the local ecosystem, I will be the first in line to oppose its construction.

First let's start with the argument that "*wind turbines do not produce enough electricity to be a viable investment.*" If this were true, then even with government subsidies, wind farm developers would go bankrupt. Instead U.S. wind farms are a 30-year success story. My favorite success story is of farmers in Minnesota and their community owned wind crop.

"*Wind turbines kill a lot of birds.*" With new asynchronous turbine generator, technology, wind turbines spin at about 12 rotations per minute. Birds have better eyesight than humans and we can see them just fine. (*continued, p. 11*)



### Bird fatalities from wind turbines and other causes

(Josh Kennedy, <http://blog.cleantechies.com/2010/05/25/demystifying-common-myths-wind-power/>)

**Wind Myths (cont. from p. 10):** A friend who works on a wind farm in Oregon says he sees more birds fly into the window at the visitors center than into wind turbine blades.

Other technologies are being implemented to ensure the safety of birds such as radar devices that detect incoming bird flocks that shut down the turbines if they are on a collision course.

*“Offshore wind turbines are an eyesore and will drive away tourism.”* Why is it that a sailboat on the horizon is beautiful, but a wind turbine is not? Every time I drive by a wind farm with someone, both of us are breaking our necks to look at them, including people that are opponents to wind turbines. I think this is one of those things that will die off as the turbines go up. There is evidence in Europe that suggests wind turbines help with tourism and actually drive more revenue due to boat tours and other related tours. It was the same for the Transamerica Pyramid building in San Francisco and the Sears Tower in Chicago. People said it would be an eyesore and now they are landmarks of innovation in their respective cities. Change is something that is slow and difficult to embrace.

*“Offshore wind farms will disrupt the underwater ecosystem.”* A recent article in *Field and Stream* magazine mentioned that universities and coral reef restoration organizations agree that the best way to regrow coral reef is on concrete structures. Moreover, there are studies being done in fresh water lakes to see if there is any impact to the fishing industry or underwater ecosystems. So far no evidence.

*“We need to stop letting foreign countries invest in our communities.”* This one is simple, American investment firms... here is your wake up call. Start investing in our community owned wind projects and this issue is solved.

*“Wind turbines are loud.”* I live about 200 yards from a freeway and it is two times louder than an entire wind farm. Go visit a wind farm then tell me they are loud.

*“Wind turbines will never replace fossil fuels.”* No one actually believes we will replace fossil fuels with wind turbines in the foreseeable future. The addition of more wind turbines may prevent the need for additional fossil fuel power plants. Every kilowatt hour of clean electricity produced is CO<sub>2</sub> that is not dumped into the air we breathe. Each wind turbine is considered carbon neutral after approximately seven months of operation, offsetting its own carbon emissions from manufacturing, shipping, and construction. However, there have been studies (admittedly inconclusive by the researcher at MIT) that wind turbines may affect the climate by slowing down the wind and through the friction caused by the wind hitting the blades.

*“Shadow flicker from turbine blades is known to cause headaches and other related illness.”* This is occasionally raised as an issue by close neighbors of wind farm projects. A wind turbine’s moving blades can cast a moving shadow on a nearby residence, depending on the time of the year (which determines how low the sun is in the sky) and time of day. It is possible to calculate very precisely whether a flickering shadow will in fact fall on a given location near a wind farm, and how many hours in a year it will do so. Therefore, it should be easy to determine whether this is a potential problem.

Many of the common myths behind NIMBY arguments have been demystified above. While much of the information used was provided by wind technicians in the field, the American Wind Energy Association, and other renewable energy sites, those of you who may have updated information are encouraged to comment and add their reference.

Source: Environmental News Network, May 25, 2010

Read more from Josh Kennedy online: <http://blog.cleantechies.com/author/joshkennedy>

### Beer Facts!

- Beer is the third most popular drink in the world, behind water and tea.
- Making one liter of beer requires 4–6 liters of water and 4–5 kg of grain.
- The biggest environmental impact from beer comes from single-serving bottles and cans.
- Producing one ton of glass requires the energy of 135 liters of oil and creates 845 kg of mining waste.
- Choosing beer on tap reduces solid waste and energy use.
- Bottle deposit laws in Denmark and Estonia have led to a 98% return rate for glass bottles.



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ECO FORUM is the monthly newsletter of the South Dakota Resources Coalition: a statewide coalition of organizations and individuals concerned with the enhancement of South Dakota's environment and the wise use of its resources. The opinions expressed are not necessarily the opinions of SDRC or its member organizations. Articles and letters may be submitted for publication to ECO FORUM Editor, 928 4th St. #4, Brookings, SD, 57006-0066. We reserve the right to edit submissions and to delay their publication until there is space for them, if necessary.

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