

In inner Mongolia, a blizzard of calamity

by Philip P. Pan
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ABAG QI, China - It began last winter with a blizzard that buried this region under an unusually thick blanket of snow. Then a summer drought parched the land, turning green prairies a dusty yellow brown. The plague of locusts came next, consuming much of what grass stubble remained. And in autumn, cyclone-like winds tore up homes and tossed small goats into the air.

Now nature has inflicted another catastrophe on the unlucky herdsman of Inner Mongolia's vast Xilin Gol grassland. A deadly snowstorm struck as the year began, leaving behind a frigid moon-cape dotted with herds of sheep frozen into ice statues, homes buried in a pale yellow mix of sand and snow and nearly a half-million people short of food in temperatures more than 60 degrees below freezing.

None of the elders here can recall a storm so devastating, much less such an awful string of misfortune. And as residents begin to tally their losses, many are asking whether they somehow brought this series of natural disasters upon themselves.

"It's as if nature is taking revenge on us," said Biligung, 39, a herdsman who lost a quarter of his flock of 400 sheep to the storm and a large patch of his face to frostbite saving the rest of his flock. "We're not scientists, but we've never seen anything like this. ... I think it has to do with what we've done to the environment."

Located along China's northern border with Mongolia and Siberia, this region is no stranger to snow. But the storm that began on New Year's Eve and continued for three days whipped sand as well as snow into the air, a blinding combination that herdsman said they

had never witnessed before.

They blamed the sand on one of China's most serious environmental challenges, the steady transformation of grasslands into deserts from overgrazing, clear-cutting of forests and other man-against-nature development policies. Each year an area about the size of Rhode Island turns to dust in China, threatening to leave millions of families with nowhere to go in a crowded country where arable land is already scarce.

The government has made stopping the desert a national priority, especially after Beijing was choked last spring by dust storms carrying sand down from the north. Prime Minister Zhu Rongji even warned that the country might one day be forced to move the capital if the deserts continued their march toward the city.

The government has tried to slow the expansion of the desert by marking land as off limits to herders and replanting trees and grass in arid areas, but local officials and scientists said the series of disasters in Inner Mongolia will surely set back these efforts.

"It's a vicious cycle," said Song Yuqin, an environmental scientist at Beijing University. "These disasters make people poorer, and then they try to clear more land or raise more livestock. That only contributes to desertification, which destroys their land and makes them poorer still."

Song said there is little evidence that overgrazing is causing the disasters in Inner Mongolia, but he said such activity is making naturally

occurring droughts and snowstorms worse. And many local residents agree.

"The snow we've seen has always been white, but this was yellow snow. It froze quickly on the animals - and on me," said herdsman Chaoketu, 39, waiting in a hospital for his blackened, swollen feet to be amputated.

He said he left his home during the storm to check on his sheep and cattle, and on his 73-year-old father, who lives about 200 yards away. But after taking only a few steps into the cold air, he realized he had made a terrible mistake.

Surrounded by swirling sand and snow, he could barely see his hands in front of his face and quickly became disoriented. When he couldn't find his way back home, he decided to continue walking in a straight line. A day and a half later, he walked into the wall of another herdsman's home.

"I didn't even see it before I hit it," he said.

Others were not so lucky. Two children froze to death while walking home from school. A mother

and her young daughter perished while trying to retrieve heating fuel located just yards from their house. A teacher died in a van stranded in the snow. And several herders succumbed while trying to save their livestock or sleeping in their traditional felt tents.

At least 39 people died in the blizzard, the Chinese Red Cross said, though the figure is expected to rise as reports come in from more isolated areas.

Major roads in the affected regions have been cleared and relief convoys are getting through, but smaller roads leading to the vast majority of the 2.2 million people in distress remain difficult to traverse without the help of tractors, which local officials say are in short supply.

The blizzard left behind hauntingly beautiful vistas of desolate, snow-covered hills, but also eerie flocks of sheep, cattle and horses that froze to death while standing. Others died huddled together in the corners of their pens. Some remain buried in tall drifts of snow, with only a head or a leg sticking out.



Most of herder Wang Yu's sheep perished earlier this year in a blizzard, including several that froze while huddled in their pen.

Russia to remove some troops from Chechnya

by Sharon LaFraniere
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MOSCOW - President Vladimir Putin announced Monday that Russia will pull some of its troops out of Chechnya and bolster civilian control of the fractious region, even as Chechen separatist guerrillas renewed attacks in two cities supposedly subdued by the Russians a year ago.

The promise of troop reduction seemed designed to show an increasingly weary Russian public that the 16-month-long war will end one day. The war was immensely popular through much of last year, but polls show Russians' appetite for the conflict has dimmed.

The Kremlin is hoping to restore the voting rights Russia lost in April because of widespread reports that Russian soldiers were killing, jailing and robbing Chechen civilians. The Russian force in Chechnya is estimated at 80,000 or more, including 40,000 army personnel and tens of thousands of Interior Ministry troops.

Sergei Yastrzhembsky, the Kremlin's chief spokesman on Chechnya, said the withdrawal is already underway. Putin did not specify in his announcement how many servicemen would remain, saying only that 22,000 soldiers will eventually be left as a permanent contingent.

Pavel Felgenhauer, an independent military analyst, predicted the actual reduction will be minor. During the first Chechen war of 1994-

96, "these withdrawals were announced time and time again," he said. "This will be a token withdrawal, no more than 20 percent. It is more a change of emphasis than of operation."

Skirmishes over the past week show how little the conflict has abated. Rebels fired on Russian checkpoints and strongholds more than 120 times, according to the Interfax news agency.

In Gudermes, Chechnya's second largest city, several Chechen officers working under Russian command were killed Sunday when militants opened fire on a hospital at midday. And in Grozny on Monday, rebels fired on a unit of Russian officers for four hours. Earlier this month, an American aid worker was kidnapped outside a village that was under military control.

Military officials said that about 10,000 Chechen fighters remain in Grozny, Gudermes and 200 elsewhere in Chechnya - compared to roughly 20,000 at the start of the war in October 1999. Mothers of Soldiers, a nonprofit organization that tracks casualties, estimates that 6,500 Russian servicemen have died and three times as many have been wounded in Chechnya.

Although it won't alter the conflict in a major way, analysts said, Putin's plan represents at least a slight shift in strategy. Putin transferred control of the anti-rebel operation from the military to the Federal Security Service, the successor to the KGB. That gives at least the appearance of a reduced military role.

On Friday Putin also approved a new structure for the Chechen civilian government, increasing the power of pro-Russian Chechens who serve along with representatives of the Russian government. Kremlin officials have said they hope to hold elections in the region next fall.

SCIENCE & TECHNOLOGY

Where we see ourselves

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Stopping light

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Two teams of physicists have for the first time found a way to slow light to a complete stop.

Ronald L. Walsworth of the Harvard-Smithsonian Center for Astrophysics and colleagues, and Lene Vestergaard Hau of the Harvard/Rowland Institute of Science and colleagues, achieved the feat by sending pulses of light into specially prepared, super-cold gas vapors of sodium and rubidium. The techniques succeeded in slowing the light pulses, which normally travel at 186,000 miles per second, to a dead stop. The researchers released the light to continue on its way.

The work, being published in the Jan. 25 issue of *Nature* and the Jan. 29 issue of the journal *Physical Review Letters*, could help researchers develop new ways to use light for faster, more efficient types of computers and communications systems, the researchers said.

"Hau and her colleagues suggest that their newly demonstrated ability to control the flow of optical information may have technological relevance to quantum computing," wrote Eric A. Cornell of the University of Colorado in Boulder in an article accompanying the *Nature* report. "Whether this will turn out to be true is not clear."

Only humans, monkeys and other higher apes can recognize their own faces. Now, scientists think they've identified the part of the brain that enables us to do that.

Julian Paul Keenan of Harvard Medical School in Boston and colleagues studied five patients who were having each hemisphere of their brains anesthetized to try to determine what was causing their epileptic seizures.

During the procedure, the researchers showed the subjects photographs of themselves that had been "morphed" to blend their faces with that of a famous person - Bill Clinton, Albert Einstein, Marilyn Monroe or Princess Diana. Afterward, the researchers showed them photos of themselves and of the famous person with whom their face had been morphed, and asked them to identify which one they had been shown before.

"Following anaesthesia of the left hemisphere, all five patients selected the 'self' face as the one they thought had been presented; however, after anaesthesia of the right hemisphere, four out of the five selected the famous face," the researchers reported in the Jan. 18 issue of *Nature*.

In addition, when the researchers showed 10 normal subjects' morphed photographs, they had more activity in their right hemispheres when the faces looked most like themselves, the researchers found.

"It is conceivable that a right-hemisphere network gives rise to self-awareness, which may be a hallmark of higher-order consciousness," they wrote.

California power struggles sap electric program

by Peter Behr
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California has long exported its trends and ideas to the rest of the country. Its disastrous experiment in electricity deregulation, however, likely will have no takers.

At times last week, the nation's richest and most populous state looked more like the struggling province of a developing country.

Blackouts rolled through towns and cities. Utilities teetered on bankruptcy. Industrial plants were idled. The state's main gasoline pipeline slowed to a trickle for want of pumping power, and elected officials were reduced to begging for electricity from Canadian dams.

California's four-year-old electricity deregulation plan, the nation's first, was the troubled product of sharply conflicting political ideologies. It was born of conservative convictions in the benefits of unfettered competition. But it was ultimately laced with price caps and controls demanded by lawmakers who didn't trust the energy industry.

The result was a Rube Goldberg structure - half free-market, half regulation - that new U.S. Treasury Secretary Paul O'Neill has called "lunacy." California's plan depended on having a comfortable margin of supply over demand, which was the case when the state started the move to deregulate in the early 1990s.

But by last summer, California faced power shortages and a chronic crisis. Planners didn't anticipate how fast electricity demand would grow in California's Internet-fed economy. Power plant construction stopped because of strict environmental restrictions and uncertainty about how deregulation would work. Power imports from outside the state, on which California depended, shrank as its neighbors' economies flourished.

Finally, the system crashed when power shortages struck during the hot, dry 2000 summer and continued through the winter.

California Gov. Gray Davis, D, said the program was sunk by greedy power generating companies. Company ex-

ecutives said the crisis wouldn't have happened had the state accelerated power plant construction. But all agree a mess this big had a lot of causes.

Miscalculations came first.

The idea was familiar: Take electricity generation away from regulated monopoly utilities and turn it over to hungry, cost-conscious energy companies, and consumers will get more power at lower prices. It worked in airlines and long-distance phone service, said Craig Goodman, a former senior energy official in the Reagan and Bush administrations.

But new power plants didn't appear when they were needed. No major new plants were built in California during the 1990s.

Stringent siting laws and powerful environmental interests clearly were obstacles, as California's critics point out. But that critique overlooks the fact that only two plants were proposed from 1995 through 1997, as the rules for California's new energy markets were being written. In those years, generators couldn't be sure how an investment in a power plant would pay off. That gap in initiating plant projects would become critical.

The program was put in place and the rules became clear in 1998. Since then, nine plants have been approved by state regulators and six are under construction. They are expected to add nearly 2,400 megawatts, enough to power 2.4 million homes, by the end of this year, but not enough to keep pace with expected growth.

Duke Energy, now building three plants in the state, has worked through long negotiations with communities about its projects.

"Given the sensitivities around environmental impacts, it is even more difficult" to build power plants in California than elsewhere, said Bill Hall, Duke's vice president for California operations. California creates "a stakeholder process, where everyone is involved. We understand that, we respect the process, but it takes time."

California's polarized politics - the perennial clash of free-market conser-

vatives with powerful consumer interests - contributed hugely to a conflicted deregulation plan.

In marketplace theory, conservatives noted, if the price of electricity went up, consumers would conserve, and there would be an incentive for generating companies to build more plants, helping balance supply and demand. But California lawmakers produced the other half of the doomed marriage: a tight rate cap that froze electricity prices below 1996 levels to protect consumers. It was raised an average of 10 percent this month in response to the current emergency.

The cap meant that when prices rose, the utilities would pay higher rates to wholesalers to supply the electricity but couldn't collect higher monthly payments from consumers, who had no incentive to conserve.

Now the state's two largest utilities, Southern California Edison Co. and Pacific Gas & Electric Co., are nearly \$12 billion in debt and on the verge of bankruptcy, creating a financial emergency that many experts believe has made some power generators unwilling to sell electricity to the state.

A tragedy usually comes with a villain, and the state's independent power generators have been cast in that role by Davis and other officials.

The California plan forced the utilities to sell many of their power plants to a new group of for-profit generating companies that have campaigned for deregulation nationwide.

The generators - led by Reliant Energy Inc. of Houston; Calpine Corp. of San Jose, Calif.; Duke Energy Corp. of Charlotte, N.C.; Southern Energy Inc. of Atlanta; Dynegy Inc. of Houston; and AES Corp. of Arlington, Va. - now produce up to 40 percent of California's electricity. Other members of the new power industry include marketer Enron Corp. of Houston and Williams Co. of Tulsa, which buys and sells power.

Generators' and marketers' charges for wholesale electricity rocketed upward, beginning this summer. Average monthly prices charged by the generators and other power suppliers jumped to 16.6 cents per kilowatt hour in Au-

gust, from 4.7 cents in May, according to a study co-authored by Massachusetts Institute of Technology economist Paul Joskow. California regulators do not disclose specific prices charged by individual power providers.

Joskow's study estimated that wholesale power prices were nearly double production costs last June, including environmental compliance charges, and 36 percent higher in August.

Meanwhile, the profits of Dynegy, Williams and Calpine for the third quarter of 2000 were all more than 300 percent higher than for the same period in 1999.

"The governor has referred to them as pirates and plunderers. Those are mild terms," said California Public Utilities Commissioner Carl Wood, a Gray appointee and longtime energy industry critic.

Top company executives deny they either colluded to raise prices or took advantage of the system.

"We are having strong earnings, no question," said Joe Bob Perkins, president of Reliant's wholesale power operations. "It wasn't gaming going on." Prices for natural gas, a key power plant fuel, have jumped astronomically in recent months, inflating power prices, he said. And generators had to pay very high prices for state-designed "pollution permits" that allow them to run plants where air quality restrictions are tight, he added.

But the Market Surveillance Committee of California's power distribution grid said evidence suggests some generators took advantage of the power shortage.

"The MSC could provide a number of instances of what it suspects are suspicious bidding and (power) scheduling behavior during the summer and autumn of 2000," the committee said in a Dec. 1 report.

It asked federal regulators to investigate why some generators' prices were so high in those instances. Federal Regulatory Energy Commission officials declined to say whether such an inquiry was underway, but there's no public sign of one.