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Wyoming Checks Mines for West Nile Source

By **JIM ROBBINS**

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MISSOULA, Mont. — An outbreak of West Nile virus in northeastern Wyoming has scientists and some residents wondering if an unconventional approach to natural gas extraction is increasing the risk of the disease.

The treeless prairie of the Powder River Basin in northeastern Wyoming is dotted with thousands of wells for extracting methane, which like other types of natural gas is used to heat homes.

But in these wells, unlike traditional ones, the natural gas is mixed with ground water. Every well that pumps out methane also pumps out ground water round the clock, and the arid region is dotted with hundreds of new ponds to hold the excess water.

In all parts of the country, health officials have advised residents that one of the first lines of defense against the mosquito-borne virus is to get rid of standing water. While the link between the methane wells and the virus is still under study, some scientists suspect that the standing water may be a rich breeding ground.

Joseph Icenogle, a spokesman for the Fidelity Exploration & Production Company, an oil and natural gas producer, said that the industry was aware of a possible link between West Nile and the ponds and that Fidelity was contributing to research about the deaths of sage grouse in the region.

But to draw a link now, Mr. Icenogle said, would be "unscientific and very premature."

Since it appeared in New York in 1999, West Nile has quickly spread across the country. Last year, Wyoming had two confirmed human cases of West Nile virus; this year the disease was diagnosed in 356 people, and 8 of them died.

Although many cases of the infection are mild, there are risks of serious and potentially fatal complications. The severe form of the disease is characterized by swelling of tissues

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Ted Wood

A pond created by a methane well near Gillette, Wyo., where sage grouse have died from West Nile.

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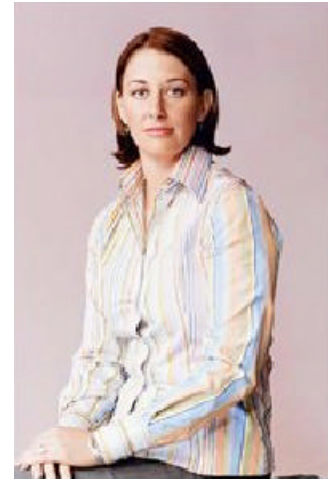
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Campbell County, which has the state's greatest concentration of the methane wells drilled into coal beds, had the second-largest number of West Nile cases, 61, according to state figures. Goshen and Platte ranked first and third, and each has an extensive flood-irrigation system that involves pooled water.

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While the virus usually lives in birds, it also spreads from birds to mosquitoes to people and horses and other animals.

The death rate of birds is also running high in Campbell County. Brett Walker, a doctoral student tracking sage grouse with radio collars he had put on them, was searching last July for one of the birds in the sagebrush-studded plains near Spotted Horse, Wyo., a few miles north of Gillette.

"We finally got a beep," he said. When he found the bird, he added: "Its head was flopped over to the side. Fifteen minutes later, it was dead."

Of the 15 birds that Mr. Walker had collared, 13 were found "face down in the dirt," he said. The birds had no marks from predators. He shipped the dead birds to the a state laboratory for necropsy; state veterinarians found the birds had died of West Nile.

But among Mr. Walker's other collared grouse — two groups similar in size 30 miles away and outside the methane field region — none died from West Nile. Deaths of grouse from West Nile have also occurred in regions that do not produce methane, among them Alberta and northern Montana, but at much lower levels. Many other birds have also been affected by the virus, including golden eagles, magpies and pheasants.

Wyoming wildlife officials canceled sage grouse hunting season in September in Campbell and two other adjacent methane-producing counties to protect the remaining populations, which are already low. Experts say there is no danger to humans from eating a diseased bird, so long as it is thoroughly cooked.

Sage grouse are known for their elaborate courtship ritual. Each summer anywhere from a few to more than a hundred male sage grouse gather on a breeding ground, to strut and display before females that gather to scout out a breeder.

Their numbers have already been reduced by 80 percent to 90 percent, said Dr. David Naugle, an assistant professor of wildlife biology at the University of Montana. Dr. Naugle attributed the decline to farming, spraying, development and other disturbances, including the methane production. The species is currently being evaluated to see if it may qualify for protection under the Endangered Species Act.

Meanwhile, Campbell County is in the midst of a natural gas boom, with 10,000 to 15,000 wells, which are more like water wells than conventional gas wells, and analysts predict the total may exceed 80,000 in 10 years, with tens of thousands more in Montana. And that means more ponds.

Along with the methane, each well pumps an average of 10 to 12 gallons of water a minute, and federal regulations require that the water, depending on its quality, be held in ponds to keep elevated levels of salts and metals from getting into other water sources.

Water is also released directly into streams and on the ground, and the huge volumes have turned ephemeral streams into year-round sources of water and created wet, spongy areas.

The Campbell County region, which normally gets just 13 inches of rain a year, has had a drought the last three years.

"In some areas of Campbell County the methane ponds are the only source of water" in the summer, said Dr. Greg Johnson, the head of the department of entomology at Montana State University in Bozeman. In trapping mosquitoes for research in Campbell County, he found both the genus and the species of adult and larval state of the mosquito that carries West Nile in and around the ponds. But another season is needed to make firm conclusions because the study area is so large.

Nancy Sorenson, a cattle rancher north of Gillette and the chairwoman of the Powder River Basin Resource Council, a group that opposes what members call the irresponsible disposal of excess water, believes that she had West Nile virus this summer.

She did not see a doctor, though, because she was told people were not being tested unless they were hospitalized, she said. The large ponds created by methane extraction near her ranch gave her pause, especially since some of the dead grouse were found on her property. "I had rain barrels in my yard, but because of West Nile I turned them all over," she said.

"The only standing water we had around here this summer was methane water," because of a drought, she said.

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