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Scientists excited for Wyoming cloud-seeding

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By Bob Moen, Associated Press

CHEYENNE, Wyo. — Like most other western states, Wyoming is rich in oil, gas, coal and other mineral deposits but is wanting for water.



Jackon Hole, Wyo.: A cloud-seeding project could bolster mountain snowpack and create more snowmelt water.

AP file

So, like other western states, Wyoming is embarking on a cloud-seeding project that aims to bolster mountain snowpack — the reservoirs of the arid and semiarid West — and create more water from spring and summer snowmelt.

But Wyoming's \$8.8 million, five-year cloud-seeding project goes beyond what other states are doing, not only because of its size and scope, but because it could yield definitive proof whether cloud seeding actually works.

"Hopefully in Wyoming, we'll find evidence for that to be a viable tool in water resource management," said Dan Breed, project scientist with the National Center for Atmospheric Research.

"This is certainly one program that has the opportunity to solve some of the problems we've been facing," said Arlen Huggins, a Nevada research scientist involved with cloud-seeding since 1980.

Millions of dollars is already being spent in a number of

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states, especially in the West, to spew silver iodide into storm clouds in order to coax more rain and snow to fall.

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In a letter recently to Interior Secretary Gale Norton, representatives of the seven states — Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming — identified cloud seeding as a key component for dealing with or averting future water shortages brought on by the strain of population growth in the West.

Breed said most of the water in the West comes from mountains, where the snowpack acts essentially like a reservoir. The Colorado River Basin, fed mainly by water from the mountains, is a major water supply for seven states. But increasing demand for water has water managers fearing shortages in the future.

If more snow can be produced in the mountains by cloud seeding, it would mean more water for cities, towns and farms.

However, whether cloud seeding actually works has been the subject of debate among the scientific community.

In 2003, the National Academy of Sciences questioned the science behind cloud seeding as "too weak" to prove it actually works. The agency called for a national research effort into cloud seeding.

Huggins said a lack of money has limited research into cloud seeding over the last decade.

Previous federally-funded research that ended in the early 1990s produced some evidence that cloud seeding works in the mountains, but not enough to meet scientific standards, he said.

Legislation has been introduced in Congress to establish a national weather modification research program, but the idea has not passed either the House or Senate.

The Wyoming project seeks to determine whether cloud seeding can increase runoff from three mountain ranges — the Wind River, Medicine Bow and Sierra Madre. The project is in its early stages, and no cloud seeding is expected to begin until next year.

"The Wyoming program is very unique with the amount of science that's being employed," said project manager Barry Lawrence of the Wyoming Water Development Commission. "The scientists are involved throughout the process."

The state is paying \$1.9 million for the National Center for Atmospheric Research to monitor and study the cloud seeding in Wyoming to see if it works.

Breed, a Boulder, Colo.-based researcher whose expertise includes cloud physics and rain enhancement, is the lead scientist in the Wyoming project.

"In a lot of the other programs, the evaluation part has been more ad hoc or not planned into it," Breed said.

In addition, the Wyoming project lasts for five years, while most others are on a year-to-year basis, he said.

Bruce Boe, director of meteorology with Weather Modification Inc., said technology to monitor the atmosphere, clouds and cloud seeding had advanced over the last five years to far exceed what had been available previously.

Weather Modification, a company based in Fargo, N.D., that does weather modification around the world, has been hired to do the cloud seeding in Wyoming.

The company is conducting a test run this month with a twin-engine plane outfitted with sophisticated atmospheric monitoring equipment.

"We have not been involved with research of this magnitude for a five year period," Boe said. "In a way, it's kind of amazing to me that no one has done this before."

Cloud seeding has been around for some 60 years. Idaho, Utah, California, Colorado, Nevada and New Mexico all have cloud seeding projects designed to increase snow and rain. North Dakota, Kansas, Texas and Oklahoma employ cloud seeding in hopes of increasing rainfall and suppressing crop-damaging hail.

Breed said he expects that the research done in Wyoming could be used elsewhere in the Mountain West, not only in cloud seeding but perhaps in weather forecasting.

But he cautioned that what scientists are trying to do in Wyoming is extremely complicated.

"The atmosphere isn't a simple thing, otherwise it would be a heck of a lot easier to forecast," he said.

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