THE
ATMOSPHERIC RESERVOIR
Examining the Atmosphere and Atmospheric Resource Management

Wyoming Weather Mod Pilot Project

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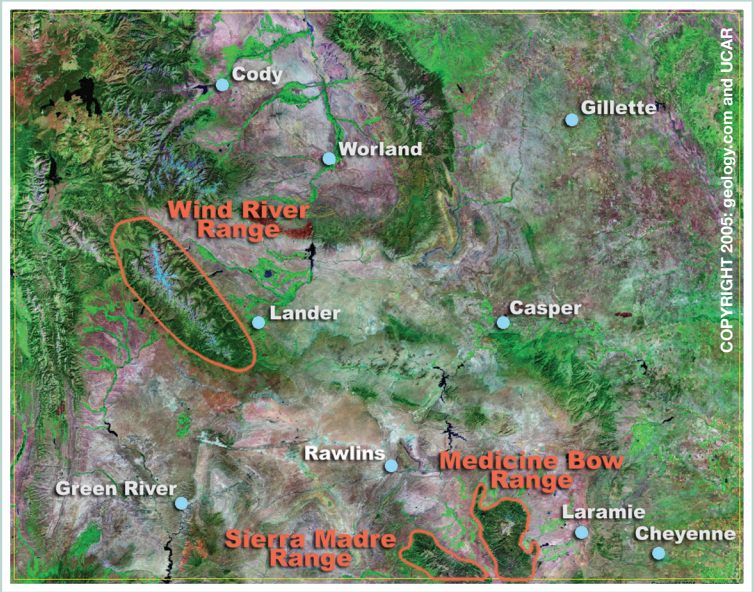
The State of Wyoming is currently in the middle of a five-year cloud seeding pilot program. The program combines operations and research and could provide more evidence that cloud seeding can be used as an effective long-term water resource management tool.

The Medicine Bow, Sierra Madre, and Wind River Ranges are seeded each year from Nov. 15 to March 31 with silver iodide seeding generators and aircraft in order to enhance snowfall. Weather Modification, Inc. (WMI) based in Fargo provides the seeding equipment and operations staff for the program, while the National Center for Atmospheric Research (NCAR) Research Applications Laboratory (RAL) conducts the research and analysis portion of the program. High-tech instrumentation such as microwave radiometers are used by NCAR to determine the water content and temperature profiles of the clouds surrounding the mountainous target areas. In addition, the University of Wyoming is concurrently conducting radar studies to evaluate changes in precipitation trends in the region.

During the last decade, Wyoming has experienced many years of drought conditions statewide and water supplies in reservoirs have seen dramatic depreciation. Water managers took a proactive stance on the issue and looked at ways to bolster their reserves. In 2005, the Wyoming Water Development Commission (WWDC) put together a proposal for a five-year, $8.8 million pilot project to study the contribution that snow-pack enhancement could have on maintaining their water supplies. The proposal passed through the Wyoming legislature and then an intensive environmental analysis was conducted to ensure that the cloud seeding program wouldn't have any adverse effects on forestlands and wildlife. Cloud seeding operations and research began during the winter of 2006-2007 and will continue through at least the 2010-2011 season.



The Green, Wind-Bighorn, and Platte River basins serve as the beneficiaries of additional snowpack. The Green River eventually feeds into the Colorado River System, the Wind-Bighorn runs into the Missouri System, and the Platte River provides much needed irrigation water for western Nebraska. Some end-users of this downstream water have already provided outside funding for Wyoming's seeding program. The Lower Colorado River Basin states of California, Arizona, and Nevada are currently providing financial assistance to Wyoming and this is expected to increase. If proven successful, this basin-wide model may be applied as a management strategy elsewhere; the most intriguing possibility for North Dakota being in the mountains of the upper Missouri basin.

There are many eyes trained on Wyoming right now to see the range of benefits cloud seeding can provide with modern technologies. With ever growing demands for water in the western U.S., water managers will continue to look to cloud seeding as a tool to provide for their customers.

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