



# THE ATMOSPHERIC RESERVOIR

*Examining the Atmosphere and Atmospheric Resource Management*

## UPDATE: Summertime Weather Modification

by Bruce Boe

Summertime cloud seeding programs are generally on the increase in North America. This summer, programs to suppress hail and/or increase rainfall are being conducted (from north to south) in Alberta, Canada, North Dakota, Kansas, Texas, and New Mexico. Oklahoma, which last year had a program involving seeding by three aircraft, is considering greatly enhanced funding through the insurance industry, a measure that is still within the legislature, so at this time the scope of their 1999 project is not known.

The biggest change has occurred in Texas, where nearly 36 million acres are now engaged in operational efforts to increase rainfall. Sponsors of the Texas programs include the Colorado River Municipal Water District, the West Texas Weather Modification Association, the South Texas Weather Modification Association, the High Plains Underground Water Conservation District, the Texas Border Weather Modification Association, the Edwards Aquifer Authority, and the Southwest Texas Rain Enhancement Association. Though hail is a big problem in Texas, the seven sponsors listed above all are motivated by the desire to increase water supplies.

The Oklahoma program, when it comes to fruition, will be statewide, sponsored and funded by the state, and designed to increase rain and suppress hail damage. As of this

date, the proposed funding mechanism is to be either a fee attached to each property and casualty insurance policy, or some similar concept.

Western Kansas continues to conduct hail suppression and rainfall enhancement seeding operations, sponsored by groundwater districts.

Crop consultants in western Nebraska continue to advocate the establishment of hail suppression operations, but indicate they are still a year away from creating such a project.

The North Dakota Cloud Modification Project continues this summer, beginning June 1. Districts are a little different; as Slope County has left the program for the 1999 project. This summer, Bowman County will operate on their own, using only two seeding aircraft, but program supporters in eastern and southern Slope

County have indicated their intent to reorganize their portion of the county and rejoin Bowman for the program next summer. Further north, McKenzie, Mountrail, and Ward Counties continue as before, again joined by Williams County, which is now in the third year of a four-year trial program.

The Alberta Hail Suppression Program differs from all the others in that it is funded and sponsored entirely by the local property and casualty insurance industry, and is directed not at saving crops, but at saving cities. Thus, the project's main target areas are the cities of Calgary and Red Deer. The Alberta project is managed by the Alberta Severe Weather Management Society, which expends about \$1 million per year to reduce hail in urban areas.

All of these programs rely upon aircraft to deliver the seeding agents to the target clouds, and upon radar to provide the needed information to identify seeding opportunities and direct the aircraft. Except for Alberta, all also share the desire to increase water supplies.

More can be learned about each of these projects at the Internet sites listed in the box at left. ■

#### For More Information:

##### ALBERTA

<http://www.wmi.cban.com/alberta.html>

##### NORTH DAKOTA

<http://www.swc.state.nd.us/ARB/html/ndcmp.html>

##### KANSAS

<http://users.pld.com/hailman/master.html>

##### OKLAHOMA

<http://www.evac.ou.edu/okwmdp/>

##### TEXAS

<http://www.tnrcc.state.tx.us/water/quantity/flood/weather.html>

Atmospheric Resource Board  
North Dakota State Water Commission  
900 East Boulevard, Bismarck, ND 58505  
701) 328-2788  
Internet: <http://www.swc.state.nd.us/ARB/>  
ND Weather Modification Association  
PO Box 2599, Bismarck, ND 58502  
701) 223-4232