

# THE ATMOSPHERIC RESERVOIR

*Examining the Atmosphere and Atmospheric Resource Management*

## National Research Council releases report on weather modification

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It was reported in the September 2002 issue of the *North Dakota Water* magazine that the National Research Council (NRC), an arm of the National Academy of Science (NAS), was in the process of reviewing the current status and future directions of weather modification research and operations.

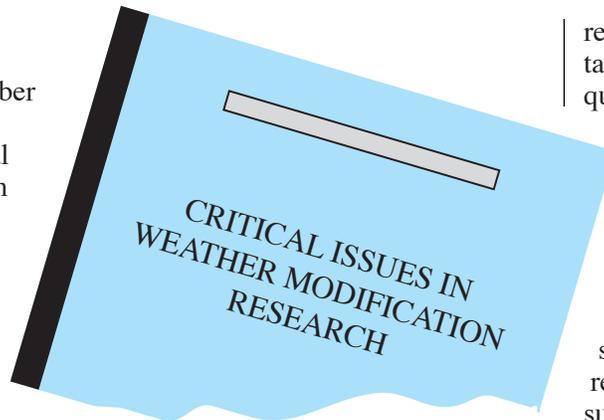
After four committee meetings held around the country, and nearly two years of study, the NRC, in October 2003, released its report entitled "Critical Issues in Weather Modification Research."

The final conclusion of the report states:

***"The committee recommends that a coordinated national program be developed to conduct a sustained research effort in the areas of cloud and precipitation microphysics, cloud dynamics, cloud modeling, and cloud seeding..."***

This recommendation was made, in part, because the committee acknowledged the potential of cloud seeding to alleviate water resource stresses and reduce severe weather hazards. Fresh water is projected to be in short supply to upwards of 3 billion people worldwide in the next 25 years. Cloud seeding may be part of the solution to this looming problem.

Specifically, the report recommends the research program include:



- Capitalizing on new remote and in situ observational tools to carry out exploratory and confirmatory experiments in a variety of cloud and storm systems;
- Improving cloud model treatment of cloud and precipitation physics;
- Improving and using current computational and data assimilation capabilities; and
- Capitalizing on existing field facilities and developing partnerships among research groups and select operational programs.

For the year 2001, there were at least 66 operational cloud seeding programs in ten states across the United States. Cloud seeding programs were also being conducted in another 24 countries around the world. Over the last 25 years cloud seeding research in the U.S. has continuously declined while operational programs have steadily increased. The disconnect between operations and research is another reason why a

revitalized research program is important, not only to address unanswered questions, but to push the technology forward.

This is an important result for the cloud seeding operations community. The NRC recommendation is something that U.S. cloud seeding states have been seeking for some time. The tremendous advances recently made in atmospheric measurement and observing technologies can now be brought to bear to do just that. The North Dakota Atmospheric Resource Board, through the Weather Damage Modification Program, is currently supporting limited research in some of the areas recommended by the NRC report. The recommendations by the committee should bolster the operational community's ability to do more in the upcoming years.

Seeing this recommendation through to fruition will be the responsibility of Congress and interested parties, primarily: operations states, cloud seeding sponsoring entities, and the scientific community. The report alone does not create a research program or appropriate one dollar of funding; that work still lies ahead. These groups must now work together to fashion a viable program that will accomplish the goals set forth by the NRC.

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