

Senate Ag Committee Hearing 3/16/23

Chairman Luick and members of the committee I would like to thank you for being given the opportunity to testify in support of HB 1166 today.

My name is Roger Neshem and I farm with my wife and 2 young daughters near Berthold. I helped lead the fight to end the longest continuously operated hail suppression program in the world. Our grassroots campaign won with a 9-1 margin in a 2020 vote to end weather modification in Ward County.

In 2017 I was appointed to the Ward County weather modification authority. I tried to implement changes such as suspending hail suppression operations during times of drought, spending more time seeding for rain enhancement, passing by laws and asking questions about results and how operations and decisions are conducted. We would fill buildings for meetings that use to take up a single small table at a restaurant. In 2017 after listening to concerns of area farmers the Ward County Commission voted 5-0 to suspend all operations until the drought was over, but the seeding continued to take place because the county commission had no power over the weather authority. No one has any power over them. They get to do whatever they want.

My experience with the Atmospheric Resource Board is equally as frustrating. No one ever addresses questions about, abusing buffer zones, excess flights, doing hail suppression while in a D4 drought or seeding out of the project area. When I asked ARB Chairman Tom Tupa about flights seeding eastbound storms in McHenry county, his response was the pilots are not able to see road signs to know where they are, so they sometimes seed out of the area.

Finally, there is the North Dakota weather Modification Association(NDWMA) of which I was a member of as a result of holding my position on the ward county weather authority board. I however never received the communications all other members on all the other boards received because I was asking the tough questions. This association gets its members from the participating counties weather boards who take money from their mill levy that is to only be used for “weather modification activities” as stated in the statute, they then donate it to the NDWMA which in turn lobbies for more funding for the program. The NDWMA is represented by Clearwater Communications, co-owned by Senator Mike Dwyer, head of ND Water Users, editor of ND Water magazine, and as of 2019 Mr. Dwyer himself was also the registered agent for the NDWMA. You have a state senator who votes to fund the program, then in turn charges taxpayers to lobby for the program, thru his communications firm, which he then charges the NDWMA, his own client, for a sponsored article, highlighting the program, in each issue of the state funded ND Water magazine where he also holds sole editorial discretion. This is the way the program gets around using “taxpayer” money to lobby for the program itself.

ND Farm Bureau and the North Dakota Grain Growers both have passed resolutions saying they are against weather modification. These two groups alone have over 40,000 members in the state while the NDWMA at my last count had 9 total members in 2019. Of the 9 4 are county weather authorities using tax dollars to pay membership(\$2500), 1 is the director of the program, 1 is owner of Weather Mod inc the contractor who does the seeding and another is the Williams County Water Resource District(more taxpayer funds!)

Going thru century code in ND every single law passed has favored weather modification and waived the state of any liability. They even state all water or lack thereof from weather modification is to be treated the same as water from natural processes.

Proponents of the program talk about how cheap it is and its high returns. The latest state review of the program claims it costs 40 cents per planted acre and in return it adds \$3.00 for hail suppression, \$9.19 per acre for a 5% rainfall increase and \$18.15 for a 10% rainfall increase. This leads to claims of a 35-53 to 1 return! Over 40% of crop losses in the state are due to drought while less than 12% are due to hail. Inexplicably weather authorities choose hail suppression 80% of the time.

In 2016 the only other hail suppression program in the USA located in Kansas was ended after 12 of its 14 program members voted it out or had it terminated by county commissions. Today there are only 4 counties left conducting hail suppression in the US out of over 3000. All 4 of those counties are in drought plagued ND. ND at one time had 38 counties conducting weather modification however due to poor results that number has dwindled to 4. No county has ever left the weather modification program and returned later.

A new study was published by Tuftedal and others in the May 2022 Atmospheric Research Journal. It attempted to measure the effect of hail suppression on rainfall in ND. It compared precipitation rates from pre weather modification in the state to the 42-year modified period from 1977-2018. The paper showed a small precipitation increase in McKenzie County when compared to 3 control areas to its west and no change with another control area to its NW.

Bowman county showed no change in precipitation on average but did show a 5% precipitation loss compared to one of the control groups.

When the study looked at Ward County, they found a 3-4% decrease in precipitation when compared with its control group. Precipitation losses in August when only hail suppression was conducted were 11% and another 3% loss in July. This was the average over 42 years! I put numbers to this precipitation decrease to quantify it in the exact same terms and methodology employed by the latest state review of the program.

If the program causes a decrease in precipitation of 4% as the latest and most extensive study to date shows you have a net loss of \$7.75 per acre for Ward County. The math is as follows:

$4/5$ is equal to 80% of \$9.19 per acre. This gives us a negative \$7.35 per acre in lost rainfall.

We will assume that hail suppression did occur even though there is zero scientifically credible evidence hail can be suppressed so that adds back another \$3.00 per acre.

Finally, we add the cost of 40 cents per acre to give us a net negative return per acre in Ward County of \$4.75.

Since there is no scientifically credible evidence hail can be suppressed most recently validated by Rivera in 2020. Therefore we can add back that \$3.00 worth of hail suppression and it cost Ward County \$7.75 per acre to have a hail suppression program each year for 44 years.

We can take the \$7.75 per acre times the acres of farmland in Ward County which as of 2020 was pegged at 1,153,475 acres. This gives us a cost per year to Ward County farmers of over \$8.9

million dollars. If we want to take the analysis further over the last 44 years, the program has cost Ward County farmers over \$391 million dollars!

Ward County sits on the far eastern end of over 140 miles of cloud seeding. No storm system can hit ward county from the west or southwest without being seeded even though we overwhelmingly voted out of the program. The seeding buffer zone still extends into Ward County 10 miles where planes still seed. The states own website claims weather modification affects can be measured 90-150 miles down wind! We don't need a 2-township buffer we need a 3-county buffer zone which would back the program right up to the Montana border which, just like SD, has made it illegal to cloud seed. If this program was not harmful why have neighboring states banned it?

The current weather modification program should be discontinued in its entirety. There is no avenue for recourse for people who have felt the negative economic impacts of weather modification. People do not have the resources to carry the high burden of proof needed to find cloud seeders. IF the state were ever found liable for precipitation losses the numbers would be well into the 100s of millions of dollars. The state has to this point not cut any funding to the program nor have they sought to limit its affects. IF a vote were held statewide today to see if the state should have a weather modification program it would be resoundingly voted down. People do not want the government messing with the weather. Non seeding counties deserve to have say over what goes on in neighboring counties that effect our way of life as men and women of agriculture. There are no fences or walls to contain weather modification. A pilot flipping a switch and turning off its burners does not mark an end to the effects of weather modification. They go on for over 100 miles according to the NDCMP. This is grounds for ending the program

alone since their permit does not cover outside the participating counties. The affects travel far outside permitted counties. No one with the power to alter seeding programs will change them so we must thru a statute that gives surrounding counties the ability to protect their interests and property rights against these all-powerful weather authorities. House Bill 1166 gives us some of that ability we desperately need. The time has come for the counties who do not want weather modification to be allowed to protect their skies from weather modification. Please vote yes on House Bill 1166

-All studies used as propaganda to support the program in ND show in some instances either no precip increases and some show decreases. However one must find the studies cited in order to learn this since the NDCMP does not post the negative side effects. (Wise 2005, Johnson 1985, Dennis 1975)

-World Meterological Organization (2017): Still uncertainty in the quantitative effects of cloud seeding to enhance precipitation and even more uncertainty to suppress hail.

