

Precipitation enhancement program began April 1

The skies are alive once again as the High Plains Underground Water Conservation District No. 1 began its sixth year of the precipitation enhancement program.

April 1 marked the start of the program, which ends on September 15. The Water District will use airplanes to disperse silver iodide into suitable cloud systems to help increase the amount of rainfall on the High Plains.

Increasing precipitation has the potential to reduce irrigation pumpage, increase crop yields, improve livestock grazing conditions, improve water quality, increase natural recharge to the Ogallala aquifer and increase runoff into reservoirs used for drinking water supplies and recreational purposes.

This year, the Water District will target clouds in a 6.8 million acre area. Meteorologist David Beer is in charge of the enhancement operations, based at the Littlefield Airport. He monitors radar activity, watching for clouds that have potential for rainfall. When suitable clouds are available, Beer dispatches aircraft to fly into the storm.

"Precipitation enhancement is an attempt to stimulate clouds to generate more rainfall than they would otherwise by adding silver iodide as a seeding agent. The silver iodide provides additional nuclei that can allow more cloud moisture to be converted to large enough raindrops to survive the fall through the dry sub-cloud layers and reach the ground as meaningful rainfall," Beer said.

To analyze the effectiveness of the program, the Water District enlisted the help of Drs. Bill Woodley and Daniel Rosenfeld, two independent weather consultants with worldwide respect in the weather community. Drs. Woodley and Rosenfeld used sophisticated computer software to compare radar images of "seeded" and "non-seeded" clouds.

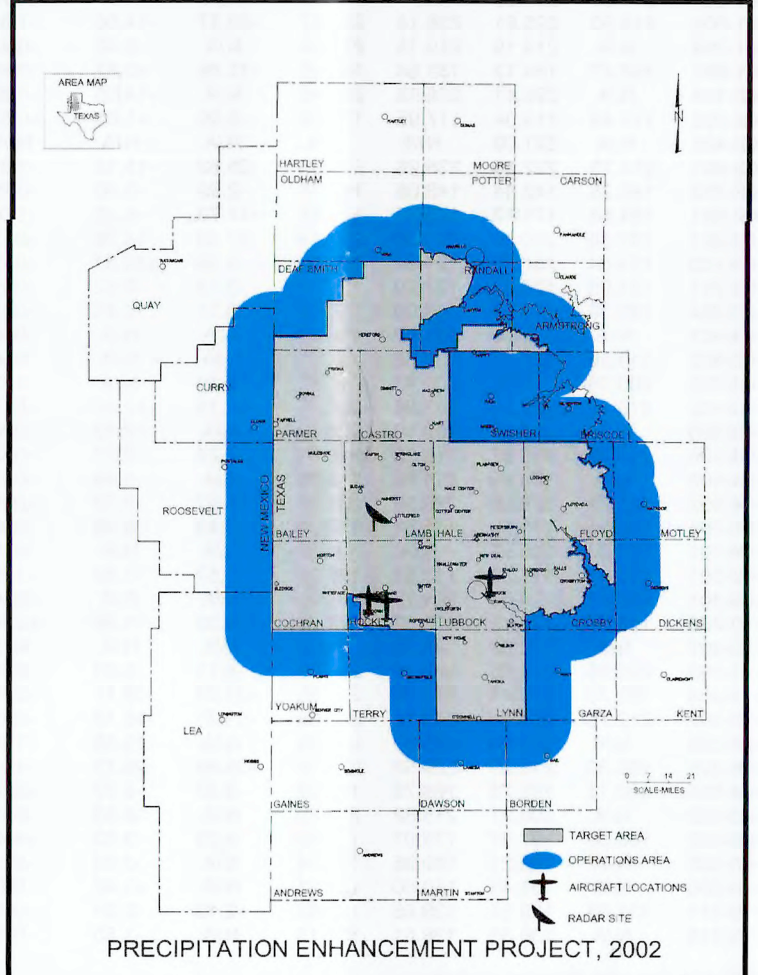
Variables such as rain rate, rain volume and lifetime of the storm, were all analyzed. When the scientists found two similar clouds, they compared the amount of rainfall from the seeded cloud to the amount of rainfall from the non-seeded cloud.

"The bottom line of Dr. Woodley's evaluation is that the program has a conservative estimate of \$30,293,600 benefit to the region. Comparing the cost of the program to this estimate resulted in a benefit-to-cost ratio of 17:1. We expect this benefit to-cost-ratio to increase since program expenses have decreased since 1999 and 2000.

The High Plains Underground Water Conservation District continually assesses its procedures to enhance the program's effectiveness," said Beer.

The benefit to the High Plains of Texas comes from pumping less water from the Ogallala aquifer. Although the precipitation enhancement program cannot make clouds, it can enhance those which do develop during the growing season. During the past few years, there have not been many cloud systems to seed due to drought conditions.

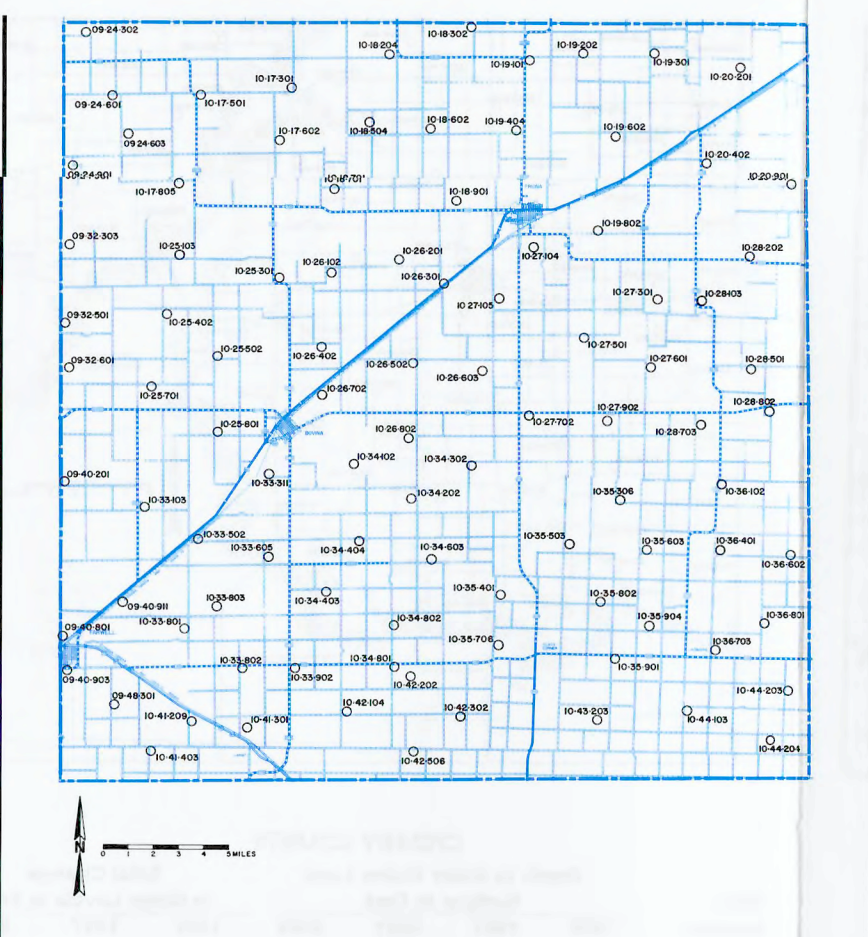
Rainfall enhancement is just one tool used by the High Plains Underground Water Conservation District as it works to achieve its long-term goal of water management.



PRECIPITATION ENHANCEMENT PROJECT, 2002

The 6.8 million acres served by the High Plains Water District make up the 2002 precipitation enhancement program target area. Two aircraft at Levelland and one at Lubbock are used to disperse silver iodide when suitable rain clouds are present.

NOTE: N/A Denotes data not available.



Well Number	Depth to Water Below Land				Total Change		
	Surface In Feet				In Water Levels In Feet		
	1992	1997	2001	2002	1992 to 2002	1997 to 2002	2001 to 2002
09-24-302	291.80	291.31	290.59	291.15	+0.45	+0.16	-0.56
09-24-601	333.85	334.86	332.20	334.34	-0.49	+0.52	-2.14
09-24-603	N/A	316.59	315.99	316.71	N/A	+1.59	-0.72
09-24-604	297.64	304.37	295.95	302.70	-5.18	-1.99	-3.19
09-32-303	331.40	329.28	N/A	N/A	N/A	N/A	N/A
09-32-601	365.10	373.65	N/A	N/A	N/A	N/A	N/A
09-32-602	330.30	336.73	344.11	346.54	-16.24	-8.81	-2.43
09-40-201	324.79	337.48	338.57	342.09	-17.30	-4.61	-2.52
09-40-202	284.24	285.10	N/A	N/A	N/A	N/A	N/A
09-40-303	292.04	320.72	336.01	N/A	N/A	N/A	N/A
09-40-401	N/A	360.90	374.02	376.49	N/A	-15.59	-2.47
09-48-301	266.08	290.12	314.08	N/A	N/A	N/A	N/A
09-48-302	196.05	196.57	199.29	198.65	-2.60	-0.08	+0.64
09-48-303	258.75	259.37	260.05	260.03	-1.28	-0.68	+0.02
10-17-601	192.02	190.50	190.72	190.94	+1.56	+0.64	-0.22
10-17-602	N/A	226.36	221.65	225.04	N/A	+1.32	-3.38
10-18-204	304.10	301.40	300.18	300.36	+3.74	+1.04	-0.18
10-18-205	249.49	252.04	252.83	253.79	-3.30	-1.75	-0.96
10-18-206	293.80	279.85	278.28	278.02	+2.31	+1.83	+0.24
10-18-207	303.15	300.80	299.24	297.18	+5.97	+3.62	+0.66
10-18-208	246.25	240.79	238.28	243.28	+3.07	-2.59	-5.10
10-18-209	269.23	260.76	262.30	264.37	-15.04	-3.51	-1.97
10-19-101	293.83	295.19	296.01	295.36	-1.44	-0.07	+0.63
10-19-102	318.28	315.40	326.80	326.05	-7.47	-0.56	+0.75
10-19-201	276.17	281.40	281.30	286.58	-2.51	+0.72	+0.67
10-19-202	248.67	255.14	256.71	262.07	-7.60	-1.13	+0.44
10-19-203	285.68	297.47	300.06	302.01	-16.43	-4.54	-1.95
10-19-204	237.66	243.29	250.87	252.30	-14.54	-1.75	-0.83
10-20-201	194.20	194.30	197.95	197.98	-3.68	-1.70	-0.03
10-20-402	256.92	264.67	268.23	N/A	N/A	N/A	N/A
10-20-601	207.88	213.65	219.27	211.68	-3.80	+1.99	+1.26
10-25-103	N/A	246.45	247.17	246.56	N/A	+1.90	+0.61
10-25-104	302.00	300.25	300.40	298.01	+3.77	+1.84	-0.39
10-25-402	264.97	263.88	266.88	262.12	+2.85	+1.76	-0.76
10-25-502	190.90	195.23	198.20	197.17	-6.81	-2.48	-1.11
10-25-701	304.10	321.21	327.88	328.69	-24.59	-7.48	-0.81
10-25-702	304.35	316.46	320.77	317.38	-13.02	-5.78	-4.01
10-26-102	290.35	297.38	296.82	296.58	+3.77	+0.80	+0.24
10-26-104	291.04	292.84	295.73	294.87	-3.23	-0.23	+0.86
10-26-201	378.54	384.30	390.48	390.88	-12.83	-6.58	-0.45
10-26-202	333.60	330.67	329.53	329.70	+3.90	+0.97	-0.17
10-26-203	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-204	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-205	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-206	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-207	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-208	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-209	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
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10-26-256	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-257	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-258	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-259	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-260	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-261	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-262	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-263	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-264	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-265	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-266	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
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10-26-268	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
10-26-269	352.90	351.29	350.40	350.21	-1.65	-1.75	-0.83
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10-26-271	352						