

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR THE MONTH OF FEBRUARY, 1935.

HAVRE:

The month was generally quite mild, with light precipitation. The mean temperature of 28.5° was 13.6° above normal. There were only seven days during the month when the maximum temperature did not reach 32° or above. There were no periods during the month when the wind velocity was high enough to cause damage from soil drifting.

The accumulation of snow in the Bearpaw Mountains, located a few miles south of Havre, is very light for this season of the year. The present snow is accumulated in drifts in the ravines, and is about a foot deep in the timber. There is very little snow, even on the north slopes. There is about the amount of snow that is usually found about May 15 in this area. Because of chinook conditions, the snow at this time is very well packed and in some cases is almost solid ice. There is time for heavy snowfall yet, but at this late season, it generally does not last.

Because of the mild weather, livestock are generally going along in good shape. Feed reserves are holding out very well. There seems to be a very good demand for horses. Several eastern horse buyers have been trying to locate good work stock, and are paying up to \$125.

Maximum temperature, 54° ; minimum, 1° ; precipitation, 0.13 inch; snowfall, 2.8 inches.

JUDITH BASIN:

February was a continuation of the "California" winter weather that it has been the misfortune of this section of Montana to enjoy for the past two winters. The number of clear, warm days with little wind movement have become almost monotonous in their regularity. Soil moisture conditions continue very poor, many old timers considering them the poorest in their experience for this season of the year. Winter wheat remains in a dormant condition, and most plants appear to be in good condition upon examination. Soil conditions are ideal for soil blowing at this time, and a few days of high winds would undoubtedly cause much damage. The mild weather has allowed the stockmen to get by with a minimum of feed, and there are an occasional few who are now offering their meager hay supplies for sale two months or more before good grazing can be had.

Maximum temperature, 67° ; minimum, 0° ; precipitation, 0.15 inch.

HUNTLEY:

Weather throughout February was mild and dry. Temperatures were considerably above the average, and precipitation was less than average. Although the wind velocity was a trifle above normal, at no time was the movement great enough during the month to cause soil blowing in this locality. Measurable precipitation was recorded on three days, two of which were snow and one was rain. The moisture received was largely lost by evaporation before penetrating the soil to any usable depth. Fall-sown grains have started growth in spots where soil and moisture conditions are favorable, but on most fields the crops appear to be dormant. Farmers on the lighter soils began field work

for the season. Some plowing was done, but most of the work has been centered on the reduction of clods resulting from plowing done last fall. More moisture will be necessary before much can be accomplished in seedbed preparation on the heavier soils.

Maximum temperature, 67°; minimum, 1°; precipitation, 0.38 inch.

SHERIDAN:

February was quite warm, the average mean temperature for the month being the same as last year, about 8° above the station average. Light snow fell once early in the month and was soon gone, leaving the ground bare the most of the month. Wind movement was slightly below the station average.

W. L. Quayle was at the station for a short time the 25th.

Maximum temperature, 63°; minimum, 1°; precipitation, 0.28 inch.

DICKINSON:

February weather was mild and dry. The ground was bare of snow most of the month. The mean temperature was 26.6°. This was 13° above normal and was the highest for February since 1931. Wind velocity was slightly below the normal for the month, but it was high enough on a few days near the middle of the month to cause some soil blowing. The mild open winter so far has been very favorable for livestock. However, the scant supply and poor quality of feed has resulted in a lot of thin stock.

Maximum temperature, 56°; minimum, -11°; precipitation, 0.19 inch.

MANDAN:

The main office activities at the field station during the past month have been the tabulation of data and the preparation of manuscripts to be submitted for publication. Several of the latter are in hand or already mailed to Washington. E. J. George has submitted one entitled "Growth and Survival of Deciduous trees in shelterbelt experiments at Mandan, N. Dak." and has nearly completed another entitled "Growth and Survival of Cooperative Farm shelterbelts on the Northern Great Plains". R. M. Williams, of the Sheridan Field Station, here for a temporary period, has been assisting Mr. George with this work. J. T. Sarvis also recently submitted a manuscript, "Rotation and Tillage investigations at the Northern Great Plains Field Station for the 20-yr. period, 1915 to 1934. J. C. Thysell is preparing a manuscript "Soil Moisture investigations at the Northern Great Plains for the years 1915-1934, and T. K. Killand one on "The hardiness of shrubbery and ornamentals tested at the Mandan Station".

Outside activities have been confined almost entirely to the FERA reservoir project. The main reservoir on this project is 80 feet in diameter, is 17 feet under and 5 feet above the ground, has a water capacity of 650,000 gallons, and is being constructed on the hill about one-half mile south of the station buildings. It will have an elevation of 103 feet above the buildings, and will give adequate water for fire protection (at present there is none). It is also planned for it to furnish the necessary water for the nursery seed beds. An auxiliary 10,000 gallons capacity reservoir is located about ten rods east of the horse barn. Water will be pumped by the present pumping equipment from the Heart River, into the auxiliary reservoir, and from there it will be forced by a booster pump into the large reservoir. Over 5,000 feet of 6-inch pipe is being laid 9 feet deep to conduct the water to the main tank, and for distribution. Excavation

work is practically completed, but due to severe weather and delay in obtaining materials, it is not expected the project can be completed before April 1.

The month of February, 1935, may be characterized as one of the warmest Februarys of record for this part of the State. The average daily maximum was 30° and the average daily minimum 17°. The mean temperature for the month was 27°, which is 12° above the 20-year normal. The highest temperature for the month was 57°, and the lowest was -7°. The precipitation for the month was 0.36 inch compared with 0.42 inch, the 20-year normal.

Mr. Baird's fruit breeding work commenced in the station greenhouse on February 1. Owing to the amount of sunshine, the blooming is coming on very rapidly.

ARCHER:

During February the weather continued mild and dry except for a short cold snap. A short, brisk snow storm occurred the night of February 24. This was followed by a drop in temperature to -14°. The precipitation for this storm was 0.11 inch.

The mild open winter has been favorable for livestock. In this section, notwithstanding the short growth made by the grasses last summer, only light feeding has been necessary. During a trip through the east central part of the State it was noted that livestock feeding was almost universal, with no pasture available, the grasshoppers having denuded the pastures during the summer. Farmers contacted during the trip reported that they considered their winter wheat ruined beyond recovery.

Work at the station consisted of compiling data and preparing seed. During the past two weeks most of the ewes have dropped lambs. The cold spell caused the loss of one lamb.

Director W. L. Quayle, visited the station February 12.

Maximum temperature, 69°; minimum, -14°; precipitation, 0.13 inch.

AKRON:

The only cold weather was late in the month, when a minimum of -3° was recorded. A driving northwest wind started the first general soil blowing of the spring period on the 14th. Then on the 21st it seemed that the whole Plains region was taking to the air, impelled by a particularly vicious northwest to north wind. There were times, particularly during the afternoon, when it was necessary to use light in order to do office work. This was positively the worst, most general, soil blowing storm witnessed by the writer within the past 14-year period. The closest approach, so far as the station is concerned, was in 1926 but the blowing then was confined to certain strips where the blow condition was not corrected by cultivation. The woven wire fencing and the shelterbelt trees along the north and west bore the brunt of the station defense against the stream of driving soil. The 34-inch Elwood fencing is again about half buried along the north side of the station. Inside, we have some developed blow soil, but the condition is being corrected by shallow furrowing implements. Again on the night of the 24th there was general soil blowing for a short time. This was with an east wind, which soon brought precipitation in the form of snow.

Maximum temperature, 68°; minimum, -3°; precipitation, 0.23 inch (snow).

NORTH PLATTE:

The weather was dry and open, with only two short storm periods. The mean temperature of 33.1° was 6.5° in excess of the Weather Bureau normal. Below zero temperatures occurred on only two days. Wind movement above 100 miles occurred on 12 days and above 200 miles on four days. Some soil blowing occurred. The air was heavily laden with dust on the 21st. This was picked up by strong winds further west in the State that subsided before reaching North Platte. High wind and snow approaching blizzard conditions occurred on the 24th. The snow drifted badly, and many roads were made impassable. Winter wheat on hard land is still surviving locally, but adverse reports have been received from most of the western part of the State. Weather conditions have been generally favorable for livestock on short feed.

Maximum temperature, 66° ; minimum, -4° ; precipitation, 0.31 inch.

COLBY:

February was generally dry, pleasant, and warm with some very striking exceptions. The temperatures were above normal and so was the wind velocity. The precipitation was just half of normal.

The fore part of the month it was rainy and cloudy continuously for five days in succession, but on none of these days was there more than a trace of moisture. A rainy and snowy period between the 13th and 15th resulted in 0.06 inch of moisture. Three inches of snow during the blizzard of the 25th gave 0.24 inch of water. High winds on five days caused considerable soil blowing.

For 8 hours between 12:35 and 8:30 p.m. February 21 we experienced the worst period of soil blowing since the first year the station was established. It was a beautiful, warm day until noon, without a cloud in the sky. The temperature was up to 50° at 8 o'clock in the morning and kept climbing until it reached 73° at noon. Shortly after 12 o'clock it began to look hazy all along the northern horizon. Soon it looked like a wall of dark gray clouds approaching rapidly. Almost immediately it was upon us, a pall of dust. It continued all afternoon. The sun was invisible, and lights were necessary all afternoon. At 5 o'clock it grew pitch dark, as it did on the dark day two years ago. It was windy, but the wind velocity on the 8-foot anemometer did not show over 30 miles per hour at any time. The wind brought some of the dust from the north with it, but a lot of soil was being picked up from the fields in this locality. Shortly after 8:30 p.m. the wind died down completely, and the night was beautiful, pleasant but cool. In the morning the ground was whitish with frost, and the air was as fresh as if there had been no dust. Every plot in the D.L.A. project, however, had either caught or lost some soil; and all over this vicinity wherever there was anything like a fence, ditch, or thistle to catch it there was a drift of soil.

The 22nd was another nice day. On the night of the 23rd we experienced another siege of serious soil blowing; which ended in snow and a blinding blizzard which lasted all day and nearly all night the 25th. Three inches of snow fell, but most fields were bare, and the snow was mostly in drifts. The silt and snow made a dreary, dirty mixture.

Maximum temperature, 73° ; minimum, -6° ; precipitation, 0.30 inch.

HAYS:

February has contributed one more month of dry weather to the continued drought that has prevailed since the last effective rain September 1 to 3, 1934. The total precipitation for February, including four showers, is 0.28 inch. The generally mild weather that prevailed throughout the month was broken by a spell of freezing weather from the 6th to 9th, during which temperatures ranged between 25° and 39°. A rain amounting to 0.06 inch on the 7th resulted in a thin sheet of ice over the ground for a few hours.

February 21 the first heavy wind of the month occurred, when a northwest wind carried with it over this section a dust storm such as old timers say they never saw before. From about 11 a.m. the wind was extremely heavy and fully laden with foreign soil. The storm reached its most severe stage about 9 p.m. During the afternoon visibility at times was zero. Road travel was extremely dangerous. After the storm, houses and offices were covered inside with soil that found its way in regardless of how well they were constructed. February 22 was quiet and mild, but the next day, although there was only a light wind, the sun was clouded with soil in the air, which continued all day to settle into everything, again covering furniture inside of offices and houses. Following this the temperatures drifted lower until zero was reached the morning of the 26th.

Two or three light rains and snows which were too small to be of value to crops, aided by forcing wind and freezing weather, have reduced much of the cultivated land to a condition that will move very easily should heavy winds prevail. Fortunately during the terrific storm there were not many fields moving in this area, but many have been reduced to a blow condition.

The Dry Land project remained quiet and suffered no damage in field D and none on the east side of fields A, B, and C, but the west side of these fields were subjected to severe exposure of a very bad blowing field over the fence, a feed crop field belonging to a neighbor. That field, incidentally heavily infested with bindweed, was drifted by the northwest wind across parts of fields A, B, and C, which made necessary much activity in cultivating and listing roads, alleys, and unplanted plots to save the wheat plots. A few of these were damaged more or less and will now require some furrows in the plots to protect them from completely blowing out. This work would be useless unless the neighbor's field condition is remedied. Arrangements have now been made to have his field listed at the earliest possible time. However, the ground is frozen at this time so listing is impossible, even though there are 2 inches of very fine easily moved soil on the surface, which will continue to blow at the least provocation. To safeguard against this, a killifer chisel will be used to-day to break the frozen ground into chunks along side the Dry Land project. Several such strips will be made at intervals across the field. This will be followed by the lister as soon as conditions are favorable, unless the chiseling is found sufficient to protect the project.

The condition of the wheat on the project other than that damaged by blowing as discussed above is questionable. Most of it appears to be alive though very poorly rooted. It could still go forward should rain occur soon. However, the prospects for a crop, as stated in previous reports, are very meager.

Maximum temperature, 79°; minimum, zero.

TUCUMCARI:

February was unusually warm, dry, and windy. Total precipitation for the past 18 months is 7.84 inches. None was received in February. The mean temperature was considerably above the long-time mean. Wind velocity was the highest of any February since 1919.

Seventeen of the past 18 months have been below normal in precipitation, 17 have been above normal in mean temperature, and 10 months of the past 12 have been unusually high in wind movement.

Soil blowing has been exceptionally bad for this time of year, but to date station fields have been held in place by timely cultivation. Farmers did some early listing, and in some cases these fields have blown level. If soil conditions permit, it is likely station listing will have to be performed soon, for surface cultivation has about lost its effectiveness.

Wheat has suffered intensely on the plains portion of the county. Many fields are past saving, but on others blowing has been minimized by strip cultivation. Cattle are grazing wheat to the ground, and livestock losses have been high on this type of pasture. Cattle in the valley are surviving surprisingly well, due largely to the extremely mild winter and rather general feeding of chopped yucca.

Range and crop prospects, which have approached the zero hour for the past year, are if possible steadily and unceasingly becoming more acute as each month passes.

Maximum temperature, 76°; minimum, 9°.

DALHART:

February was different from January in two respects. January furnished some moisture for wheat and rye, but February did not. January was distinguished, on account of the prolonged drought, by an absence of soil movement, but the past month furnished several days of severe soil movement. In spite of the fact that the wind movement was unusually high at times, soil blowing was held under control on the station. Soil blowing has not yet reached the alarming proportions which existed in the spring of 1933 or during the worst of the movement in the spring of 1934. In most places where the soil has blown in previous years, it has just now reached the blow condition so that one severe wind would change the landscape in a very short time.

Wheat and rye continue alive, although a few dead plants are appearing. Rye that was seeded for a cover crop is holding on remarkably well. Soil moisture samples show there is very little available soil moisture left except on fallow land.

Recently the chief work on the station has been the removing of dead trees in windbreak plantings; rather wide gaps now exist in the Western Yellow pine and redcedar windbreak northwest of the office. Incidentally these two trees seem to be the hardiest of the conifers.

Maximum temperature, 78°; minimum, 7°; precipitation, 0.02 inch.

BIG SPRING:

With the exception of three days beginning February 25, when a norther hit this section, temperatures during the month have been very mild. During this recent cold spell the minimum dropped to 16°; this was cold enough to kill some peach blossoms which were out and also the Chinese elm blossoms. This drop in temperature should delay some of the other fruit trees from budding out so early. Wind velocity has not been strong enough to start any soil movement during the month.

Three rains and a snow during the month totaled 1.32 inches of water. This has started the winter weeds growing for the rancher. This is a welcome sight, for there is no grass on the range now. These rains also put the land in excellent shape for listing; it was badly needed for very little land had been prepared as the soil had become too dry.

Station work has consisted of pruning the orchard and vineyard, oiling and repairing harness, and threshing and cleaning hand selected planting seed.

Maximum temperature, 81°; minimum, 16°; precipitation, 1.32 inches.

LAWTON:

Generally mild weather prevailed in February until the 24th and 25th, when the temperatures dropped from a maximum of 76° to a minimum of 14°, accompanying one of the worst dust storms experienced in more than a year. The wind velocity for the 24-hour period from the 24th to the 25th averaged 22.1 miles per hour. Soil blowing on the station fields was of no consequence. Some spring plantings of oats that were just emerged were killed back to the surface, but subsequent growth has been satisfactory.

The monthly precipitation of 1.21 inches was recorded on February 6 and 12. Both rains, falling very gently, resulted in no run-off and were very beneficial to small grains. Farm complaint about the lack of moisture is very general. The subsoil continues dry, and a few days of high wind velocity account for the restricted surface moisture.

Station plots of wheat are in a normal state of growth and development. Winter barley and winter oats were completely killed by the minimum temperatures of 2° and 3° on January 20 and 21. Oats seeded on the rotation plots February 11 and 12 showed rather thin, uneven stands by March 1, the percentage of stand depending largely upon the compactness of the seed bed. Variety oats seedings made February 15, were in most instances, emerging March 3. January 26 and February 5 seedings of oats in the rate and date of seeding test emerged to very good stands.

Maximum temperature, 81°; minimum, 14°.

WOODWARD:

The first half of February was quiet and warm. The minimum was little below freezing at any time. On seven days of the 15 there was slight precipitation totaling 0.79 inch. During this foggy-rainy spell the temperature varied only 6° in 110 hours, which is very unusual. Wheat which had previously been either frozen or pastured close to the ground was greatly benefited by this period of rain and high humidity. The benefit lasted to the end of the month because there was little top growth to demand moisture.

During the last half of the month there was no rain, but there were several days of high winds. High temperatures generally prevailed with one short period of harsh freezes. There has as yet been very little drifting of soil over the country generally and none on the station. Because of the present period of over two weeks "without a cloud in the sky" farmers are beginning to be apprehensive of another dry season. They have learned that it can be dry longer than ever before - why not still longer? And they are not optimistic over a wheat crop. There is no "season" in the

soil. The only encouraging thing about prospects is the little top growth on the wheat, and as yet the rare occurrence of high winds. Work of the month has consisted largely of graveling roads, digging out trees of no further use, and planting others, especially evergreens.

Maximum temperature, 85°; minimum, 10°; precipitation, 0.79 inch.

BELLE FOURCHE: (Report for the three months ending February 28, 1935.)

December and January were comparatively mild, and February was abnormally warm, the mean temperatures for the three months being 4°, 3°, and 11° above normal, respectively. A few periods of cold weather occurred, and sub-zero temperatures were recorded every night from December 24 to 28, January 12 to 14, and January 17 to 23, inclusive. The coldest weather of the season occurred January 18, 19, and 20, when minimum temperatures ranged from -19° to -24°, and daily maximum temperatures ranged from -1° to -15°. From January 25 to February 20, the temperature did not fall below 15°, and it remained above zero during the colder weather which prevailed the latter part of February.

Precipitation of 0.22 inch on December 5 and 0.25 inch on December 21 were of some temporary benefit to fall grains, but otherwise no precipitation of value occurred during the winter until February, when 0.43 inch was received in the form of wet snow. No drifting occurred, and the snow melted slowly so that practically all the moisture was absorbed by the soil.

Frost was out of the ground by February 10, and the surface soil was quite dry and loose. Frequent high winds caused considerable soil blowing during February until the receipt of the snow on February 21.

Lack of precipitation, soil blowing, and extensive damage by jackrabbits have been very unfavorable to fall grains. Winter rye resumed growth during the middle of February. Jackrabbits have kept the new growth eaten down to the surface of the ground and much of the winter wheat has been destroyed by rabbits. These pests have been exceptionally numerous, and attempts to control them by poisoning or shooting have been unsuccessful. The moisture received February 21 was of great benefit to fall grain, and the protective covering of snow has prevented further damage by rabbits.

Field work has consisted of duckfooting fallow, green manure, and corn stubble plots, and all roadways to control soil blowing.

Month	Precipitation	Temperature	
		Maximum	Minimum
December	0.47 inch.	53°	-9°
January	0.11 inch.	58°	-24°
February	0.59 inch.	63°	2°

N O T E:

U. S. Dept. Agriculture Press Release February 17, 1935.

"Weather Men Discover Eleven-Month Cycle.

"Late spring will be warm and dry in the Midwest this year, if May conforms to its usual practice of bringing high temperatures 11 months after an abnormally hot June. This does not mean that if May 1935 follows the usual sequence it will usher in another drought in

the central valleys.

"Climatologists of the Weather Bureau have discovered a definite 11-month weather sequence from May's habit of being warm when June of the year before has been abnormally warm. Past records show that every June for which temperatures 5° above normal were recorded was followed the next year by a warm May over most of the Missouri and upper Mississippi Valleys. When June temperatures were 5° or more below normal the sequence still held, with cool Mays."

* * * * *

