

Soil Moisture Conditions in Kansas - Week #15 (4/14/24)

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Introduction

The USDA collects several estimates on a weekly basis that are important to crop conditions. First the USDA collects the actual crop conditions of each crop during the growing season. Ibendahl has used these weekly crop condition reports to try and estimate wheat, corn, and soybean yields (See AgManager.info).

The second weekly estimate the USDA collects is the soil moisture status. The USDA reports on both topsoil and subsoil conditions. Their report is the percent of farmland in the state that has surplus moisture, has adequate moisture, is short of moisture, or is very short of moisture. This information also has the potential to be used in a yield prediction model and perhaps combined with the crop condition report. Ibendahl uses the Drought Monitor Index from the University of Nebraska to predict yields based on the soil moisture levels.

Current soil moisture in Kansas

Figure 1 uses a Likert scale to represent subsoil moisture as of 4/14/23 while Figure 2 represents topsoil moisture on that date. Both graphs show the last 20 years. The red and orange portion of the bars show the amount of the state where soil moisture is short or very short. The total of these two categories is shown as the percent of the left hand side. The light blue portion of the bar is the percent of the state where the soil moisture is in surplus. This percentage is shown on the right hand side. The middle section in yellow is the percent of farmland with adequate moisture. This is the percentage shown in the middle of the page.

Observations

The year through April 14th has been very dry which is likely not a surprise to anyone. As of April 14th, only 38% of the state has adequate subsoil moisture while only 35% of the state has adequate or surplus topsoil moisture. Only 1% of the state has any surplus subsoil moisture and only 1% of the crop acres have any surplus topsoil moisture.

The 62% of Kansas with either short or very short subsoil moisture has to be a concern as well. In the past 20 years, only 7 years have had that level of short and very short subsoil moisture. The

topsoil moisture situation is almost identical with only 3 years with a higher percentage of short and very short moisture.

This publication was written before some rain on 4/15 so the soil moisture situation may have improved slightly. Based on the Likert scales, 2024 is not as dry as 2023 at this same date. However, 2023 was a very dry year. It is still relatively early in the growing season so conditions could improve rapidly.

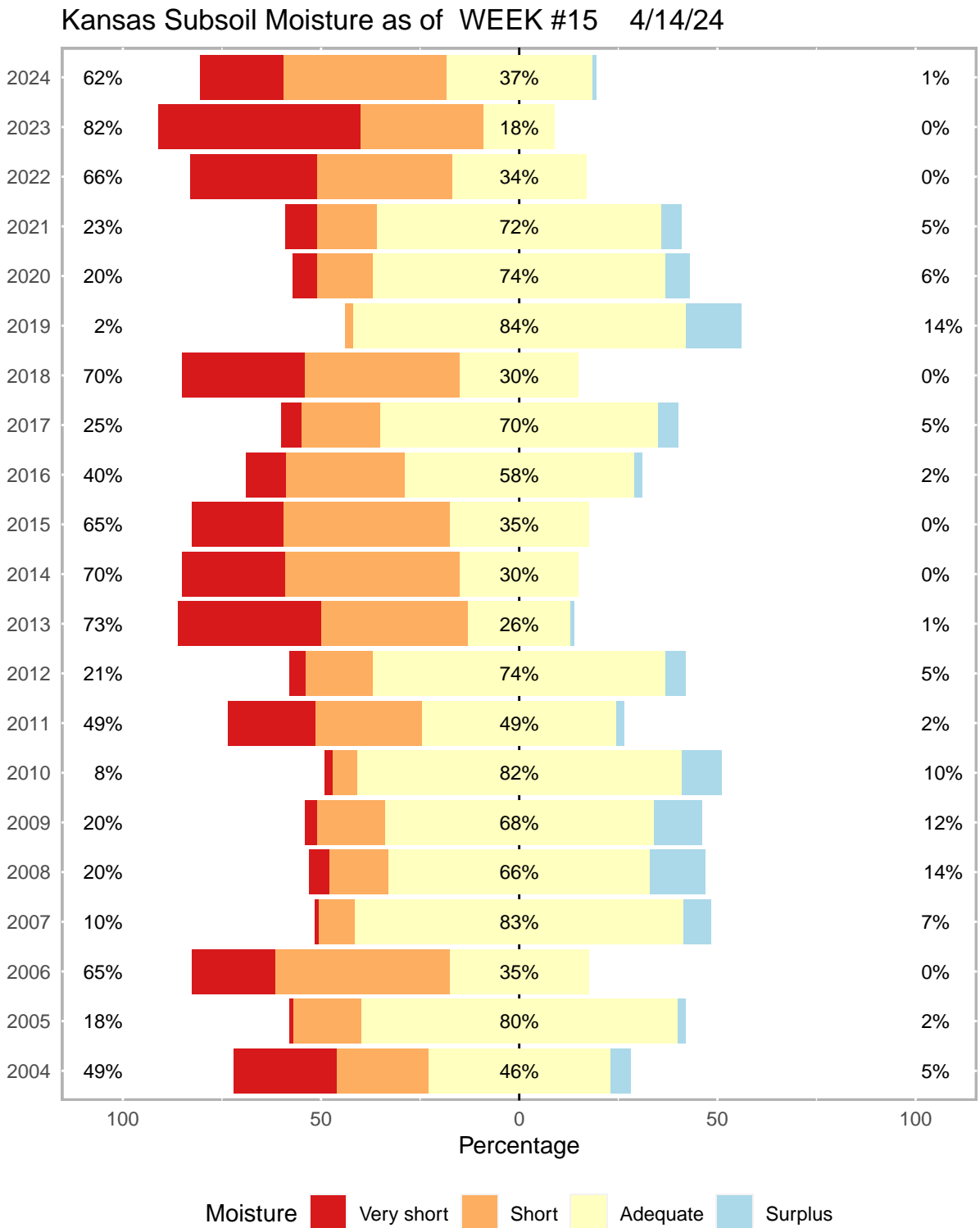


Figure 1: Subsoil Moisture in Kansas for a Specific Week From the Last 20 Years

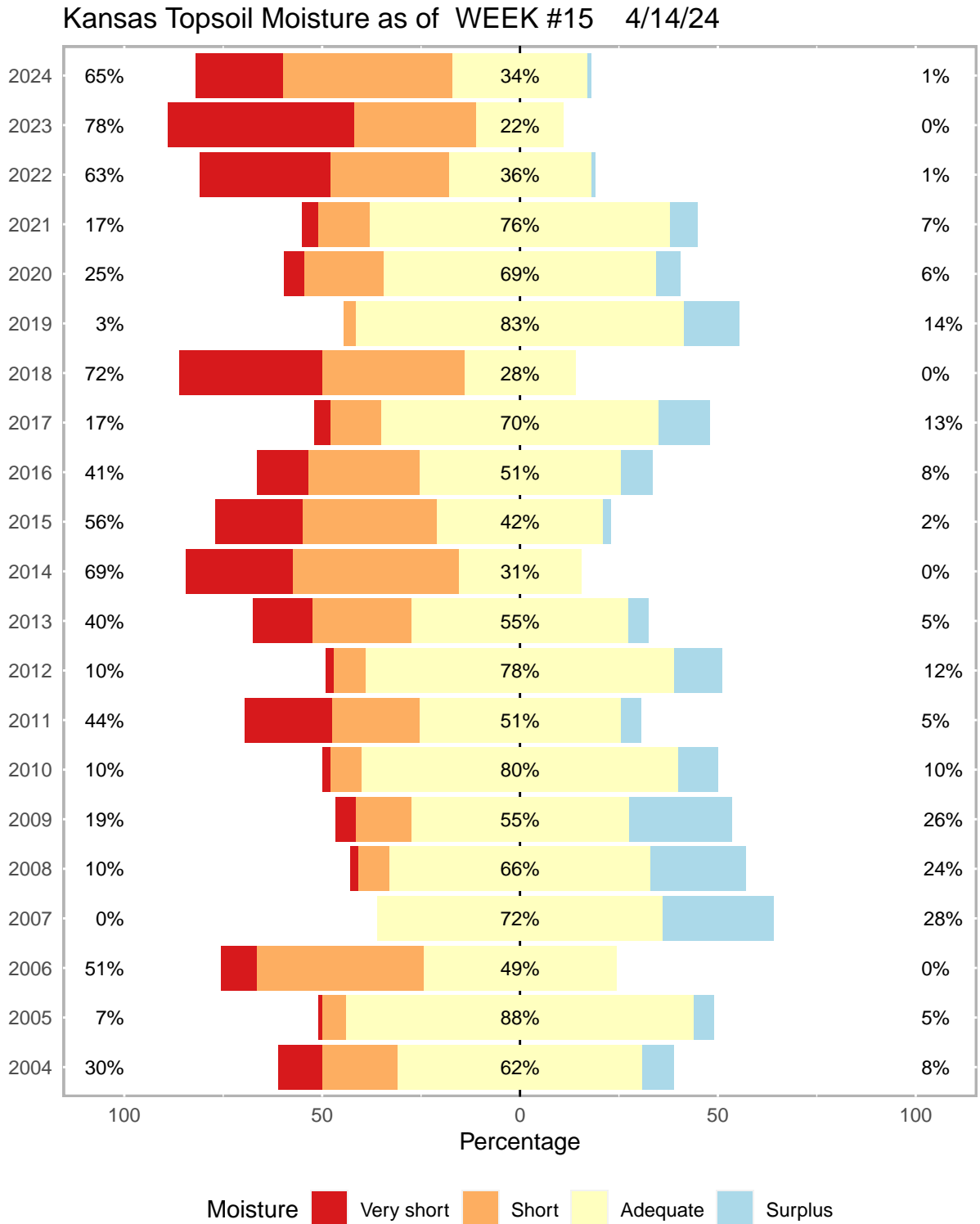


Figure 2: Topsoil Moisture in Kansas for a Specific Week From the Last 20 Years