PRAIRIE WIND TRAJECTORY AND CEREAL RUST RISK REPORT for June 10-16, 2025

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Agriculture and Agri-Food Canada (AAFC) and Environment and Climate Change Canada (ECCC) have been working together to study the potential of trajectories for monitoring insect movements since the late 1990s. Trajectory models are used to deliver an early-warning system for the origin and destination of migratory invasive species, such as diamondback moth. In addition, plant pathologists have shown that trajectories can assist with the prediction of plant disease infestations and are also beginning to utilize these same data. We receive two types of model output from ECCC: reverse trajectories and forward trajectories.

'Reverse trajectories' (RT) refer to air currents that are tracked back in time from specified Canadian locations over a five-day period prior to their arrival date. Of particular interest are those trajectories that, prior to their arrival in Canada, originated over northwestern and southern USA and Mexico, anywhere diamondback moth populations overwinter and adults are actively migrating. If diamondback adults are present in the air currents that originate from these southern locations, the moths may be deposited on the Prairies at sites along the trajectory, depending on the local weather conditions at the time that the trajectories pass over our area (e.g. rain showers, etc.). Reverse trajectories are the best available estimate of the ''true'' 3D wind fields at a specific point. They are based on observations, satellite and radiosonde data.

Disclaimer

Information related to trajectory events based on forecast and diagnostic wind fields and cereal rust risk is experimental, and is **OFFERED TO THE PUBLIC FOR INFORMATIONAL PURPOSES ONLY**. Agriculture and Agri-Food Canada, Environment Canada, and their employees assume no liability from the use of this information.

1. RUST DEVELOPMENT IN SOURCE LOCATIONS

a. Pacific Northwest (PNW)

i. Dr. Chen indicated in a May 21, 2025 update that stripe rust had developed further in the PNW and this was likely due to rainfall and cooler temperatures over the last few weeks prior to the report date (https://striperust.wsu.edu/2025/05/21/stripe-rust-update-may-21-2025/ and Stripe rust update 05/21: Disease has been developing in Washington | WAWG). Stripe rust was noted in commercial fields as well as research trials/fields, but generally at low incidence levels. Symptoms of stripe rust were also noted on barley in a disease nursery site at Central Ferry station (Garfield County). As of May 21, 2025, Dr. Chen's recommendation was for fungicide application before flowering on susceptible to moderately susceptible winter wheat varieties, and herbicide timings for spring wheat. Moreover, he recommended continued scouting of previously sprayed fields where applications were done at least three weeks previously, as the rust pathogen may resume growth and sporulation.

ii. Drs. C. Bates and T. Paulitz, USDA/Washington State University, provided additional information to Dr. Chen's recent report (https://smallgrains.wsu.edu/rusthtap/) They indicated that stripe rust development has been observed in both commercial fields in the counties of Franklin and Adams , while observations were also noted in research fields in Garfield and Whitman counties. Although levels were generally low, some susceptible experimental lines have had very high severities. They also indicated that recent rainfall and cooler temperatures favoured further development, while weather forecasts would likely encourage further stripe rust expansion. Fungicide recommendations were similar to those previously reported by Dr. Chen.

iii. The third Cereal Disease Laboratory (CDL) was released May 30, 2025, and Dr. Fajolu indicated that further increases in stripe rust have been noted for a number on susceptible trial lines in Garfield county, while reiterating observations from previous CDL reports (https://www.ars.usda.gov/ARSUserFiles/50620500/CRBs/2025%20CRB%20May%2030.pdf). Of note is a report of significant stripe rust on susceptible barley lines in research trials in Garfield county.
iv. Previously in the second USDA-ARS CDL report for 2025, Dr. Oluseyi Fajolu (CDL, St. Paul, Minnesota) reported development of leaf rust in three wheat samples from the Pullman region of the PNW (https://www.ars.usda.gov/ARSUserFiles/50620500/CRBs/2025%20CRB%20May%2016.pdf).
v. The USDA-ARS Cereal Disease Laboratory posts maps showing observations of stripe and leaf rust in the USA and maps as of May 30, 2025 (site checked as of June 18, 2025) are shown in Figures 1a and 1b, respectively for the PNW region.
vi. In the most recent update on June 18, 2025, Dr. Chen, USDA-ARS/WSU, indicated that they have finished stripe rust assessments in their winter wheat trials at five locations in Washington State and at Hermiston, Oregon (Dr. Chen, USDA-ARS/WSU, Stripe Rust Update and Special Notes on Yr5 and Yr15, June 18, 2025, Stripe rust report 06/19/25 | WAWG). Very high levels of stripe rust (>=90%) occurred at these locations on susceptible test lines/varieties. In contrast, stripe rust severity in commercial fields in the PNW on both winter and spring wheat have been low and generally <1%. Reduced rainfall will likely limit further development of stripe rust on spring wheat, although fungicide is suggested on susceptible varieties where increased moisture has occurred or with irrigated crops. Dr. Chen also indicates that the 2025 season for stripe rust on winter wheat is mainly over now.
vii. **As of June 19, 2025, the current development of stripe rust, especially in commercial fields, and dry weather conditions in the PNW suggest this region represents a low risk of being a source of stripe rust inoculum for Prairie wheat growers in 2025. Given recent dry conditions further significant PNW stripe rust development is not expected, while the winter wheat crop is well into the grain filling period and as it starts to mature it will no longer be an important source of stripe rust for the Prairie region (https://www.wawg.org/crop-progress-report-06-16-25/).**
viii. Currently there are no reports of stripe rust symptoms in Prairie winter or spring wheat crops.

b. **Texas/Oklahoma**

i. The third Cereal Disease Laboratory (CDL) released May 30, 2025, and Dr. Fajolu indicated that increases in leaf rust have been noted for a number of locations in Oklahoma (https://www.ars.usda.gov/ARSUserFiles/50620500/CRBs/2025%20CRB%20May%2030.pdf). Counties confirmed to have leaf rust included Blaine, Caddo, Cotton, Grady, Garfield, Kingfisher, Payne, Tillman, and Washita.
ii. Dr. Fajolu also covers observations related to oat stem and crown rust. Both diseases were observed in Texas in early and late April in monitoring and disease screening plots, wind breaks (oat used in watermelon fields) as well as wild oats in ditches. Levels ranged from trace to significant depending on the variety/breeding line. Note these observations reported in the Cereal Rust Bulletin #1 are mainly based on surveillance activities by Drs. Y. Jin and M. Moscou (USDA-ARS Cereal Disease Laboratory (CDL) ([CEREAL-RUST-SURVEY] CDL Southern Texas and Louisiana survey trip, April 14, 2025, http://fmp.crl.umn.edu/fmi/webd/CRS-mail). As of Cereal Rust Bulletins #2 and 3, there have been no further reports of oat crown rust.
iii. The most recent update from Dr. Aoun, indicated that stripe and leaf rust remained low with limited further development and as indicated in the previous report the late appearance or rust will have limited impact on Oklahoma wheat yields ([CEREAL-RUST-SURVEY], M. Aoun, Oklahoma wheat disease update, June 2, 2025, http://fmp.crl.umn.edu/fmi/webd/CRS-mail).
iv. The USDA-ARS Cereal Disease Laboratory posts maps showing observations of stripe and leaf rust in wheat and crown rust in oat in the USA and the maps as of May 30, 2025 (site checked as of June 18, 2025) are shown in Figures 2-4, respectively.
v. **As of June 18, 2025, there is a low risk associated with the Texas/Oklahoma region being a significant source of stripe, leaf, stem and crown rust inoculum for dispersal into the Prairie region**

of Canada. It is unlikely that further rust development will occur and increase this risk, especially given that as of June 15, 2025, 56% and 30% of the Texas and Oklahoma winter wheat crops have been harvested, while, respectively (https://quickstats.nass.usda.gov/results/6973F6E0-3DE0-3153-BEBB-489BD4DB599D). Most Texas and Oklahoma winter wheat crops are likely mature and they will no longer represent an important source of uredospores which only develop on green living non-senesced plant tissues. Given the status of the winter wheat crops in Texas and Oklahoma, subsequent PCDMN risk updates will not include these states.

c. **Kansas/Nebraska**

i. County-based observations of stripe rust in Kansas and Oklahoma winter wheat fields as of June 19, 2025, are shown in Figure 5 (https://wheat.agpestmonitor.org/stripe-rust/). Note only some states appear to be using this reporting tool.

ii. Dr. DeWolf provided an update on June 3, 2025 regarding the appearance of low levels of stem rust in two Kansas counties, while also indicating stripe rust had been found in several central and northwestern Kansas counties, but generally at low levels ([CEREAL-RUST-SURVEY], E. DeWolf, Stem Rust Detection in Kansas, June 3, 2025, http://fmp.crl.umn.edu/fmi/webd/CRS-mail).

iii. Earlier this spring there was a report of stripe rust in Ontario and this may be related to overwintering of the pathogen on winter wheat, while the agpest monitor site also indicates further detections (Figure 5, https://www.realagriculture.com/2025/05/growers-must-be-vigilant-as-stripe-rust-confirmed-in-ontario/?utm_source=twitter&utm_campaign=May%2014%2C%202025&utm_medium=soci). This early development could act as a source of stripe rust for further regional development and as a consequence scouting, especially in fields planted to susceptible varieties, may be needed along with potential fungicide application.

iv. Continued stripe rust development has been reported in Ontario (https://x.com/OntAg/status/1925899641133953228; https://farmtario.com/crops/ontario-growers-urged-to-scout-for-stripe-rust/, https://x.com/JoannaMWallace/status/1932153361312383092, https://x.com/Ellen_Sparry/status/1932112213692588128, https://x.com/Ellen_Sparry/status/1932062087116706245, https://x.com/KelseyBanks/status/1931652768424436007).

v. Stripe rust has been reported for the first time in 2025 in Nebraska. Drs. Wegulo, Broderick, and Frels reported in their May 23, 2025 update that stripe rust was detected in SE Nebraska on May 22, 2025 (https://cropwatch.unl.edu/first-signs-stripe-rust-detected-southeast-nebraska-wheat-fields/). In a subsequent update on May 30, 2025 Dr. S. Wegulo found stripe rust in in Lancaster and Mead Counties in research trials ([CEREAL-RUST-SURVEY] Update from Nebraska, Dr. S. Wegulo, https://cropwatch.unl.edu/disease-severity-varies-risk-fusarium-head-blight-rises-nebraska/). In Lancaster there were trace incidence levels although severities ranges from low to moderate, while at Mead moderate incidence was observed while severities ranged from trace to very high depending on variety (Figure 6).

vi. In his latest update on June 13, 2025, Dr. Wegulo indicated that stripe rust has continued to spread in Nebraska with a total of 14 counties reporting stripe rust symptoms, while only one county has reported very low levels of leaf rust (Figure 6, https://cropwatch.unl.edu/stripe-rust-expands-nebraska-wheat-fields-leaf-rust-remains-isolated/). On June 16, J. Fomba, Graduate Research Assistant, University of Nebraska-Lincoln, reported observations of stripe rust during surveys in Nebraska (https://x.com/FombaJanis/status/1934668034079326511).

vii. In late May the first observation of stripe rust was reported in Wisconsin in a research trial at the Arlington Agricultural Research Centre (Stripe Rust Detected in Wisconsin Wheat | Wisconsin Ag Connection, Figure 5). Symptoms were observed on a susceptible trial line.

viii. In a June 19, 2025, North Dakota State University (NDSU) Crop & Pest Report, Dr. A. Friskop, reported that none of the cereal rusts have been reported in North Dakota, while further updates on the appearance of rusts will be provided (https://www.ndsu.edu/agriculture/sites/default/files/2025-06/09%20June%2019%202025%20CPR%20Final.pdf).

ix. **As of June 19, 2025, there is generally a low risk associated with the Kansas/Nebraska region being a significant source of stripe and leaf rust inoculum for dispersal into the Prairie region of Canada.** However, the expansion of stripe rust is concerning and if cooler, wetter weather occurs over the next 7-14 days the risk of stripe rust inoculum, especially coming from Nebraska, could increase. The observation of stripe rust in Wisconsin in late May also brings the stripe rust issue potentially closer to the central to eastern Prairie region. Finally, winter wheat development in Kansas is progressing with 3% of the crop harvested, 88% coloured, and 39% mature as of June 15, 2025 (https://quickstats.nass.usda.gov/results/6973F6E0-3DE0-3153-BEBB-489BD4DB599D and https://quickstats.nass.usda.gov/results/1C41AA49-0BF1-39A2-A1D0-1F984815FB2F). As Kansas winter wheat crops move towards maturity and harvest they will no longer represent an important source of uredospores which only develop on green living non-senesced plant tissues.

2. Reverse trajectories (RT)

a. Since April 1, 2025 the majority of reverse trajectories that have crossed the prairies have originated from the Pacific Northwest (Idaho, Oregon and Washington) (Figures 7-12).

b. **Pacific Northwest (Washington, Oregon, Idaho)** – Since April 1, 2025, the greatest number of reverse trajectories, crossing the Prairies, have originated from the Pacific Northwest (n=773, Figure 7). Most of these trajectories passed over Alberta and western regions of Saskatchewan (Figure 8). For the week of June 10-16, 2025 there have been a total of 77 trajectories for 32 locations up from the two reverse trajectories that passed through the Prairie region over two locations from June 3-9, 2025 (Table 1). VULCAN, AB had six trajectories, while BEISEKER, LETHBRIDGE, and MEDICINE HAT, AB each had five trajectories from the Pacific Northwest from June 10-16, 2025. KINDERSLEY, SASKATOON, and SWIFT CURRENT, SK each had four trajectories during this same period, with CALGARY and OLDS, AB, and MOOSE JAW, REGINA, and WATROUS, SK having three trajectories each from the Pacific Northwest for June 10-16, 2025 (Table 1). The remaining 19 locations had 1-2 trajectories from the Pacific Northwest.

   i. **As of June 16, 2025, there is low-moderate risk associated with the PNW region being a significant source of wind trajectories for dispersal of the stripe rust pathogen into most of the Prairie region. However, those locations with three or more trajectories during this period would be at higher risk.**

c. **Oklahoma and Texas** – Since April 1, 2025, 82 reverse trajectories, originating over Oklahoma and Texas were reported to cross the prairies, mainly in Manitoba and eastern Saskatchewan (Figure 9). Most of these trajectories passed over Manitoba and central to eastern Saskatchewan (Figure 10). This past week there were a total of 10 trajectories from the TX/OK region for nine Prairie locations, with each location having 1-2 trajectories (Table 2).

   i. **As of June 16, 2025, there is a low risk associated with the TX/OK region being a significant source of wind trajectories for dispersal of rust pathogens into the Prairie region of Canada.**

d. **Nebraska and Kansas** – A total of 263 reverse trajectories, originating from Kansas and Nebraska have crossed the prairies, primarily Manitoba and Saskatchewan (April 1 – June 16, 2025) (Figure 11). Most of these trajectories passed over Manitoba and central to eastern Saskatchewan (Figure 12). From June 10-16, 2025, there were a total of 16 trajectories over 14 Prairie locations, with 1-2 trajectories per location (Table 3). Interestingly, one of these trajectories passed over Manning, AB in the Peace River region of Alberta on June 15, 2025 (Figure 13).

   i. **As of June 16, 2025, there is a low risk associated with the KS/NE region being a significant source of wind trajectories for dispersal of rust uredospores into most of the Prairie region.**

3. Prairie Crop Development, Weather Conditions, and Overwintering of Rust

a. Winter wheat – Winter wheat is moving past flag leaf emergence and into the heading stages (https://tinyurl.com/pba6d29u; https://tinyurl.com/42nt9z96).

b. Spring wheat – Across the prairie region spring wheat has been planted with crops generally moving into the tillering and stem elongation stages (https://tinyurl.com/yubwx8hy; https://tinyurl.com/pba6d29u; https://tinyurl.com/42nt9z96).

c. This past week (June 9-15, 2025) the average temperature across the Prairies ranged from around 10 to 20°C, with the coolest areas being in the Peace River region of Alberta and northern cropping areas of the Prairie region (Figure 14).

d. Growing season temperatures (April 1-June 15, 2025) have been above average for large areas of the Prairies, although the BC Peace was up to 3°C above normal for this period, while areas around Grande Prairie, AB, southcentral and southeastern Saskatchewan and western Manitoba have been close to normal or slightly cooler than normal (Figure 15).

e. Accumulated rainfall over the past week (June 9-15, 2025) ranged from around 2 to over 42 mm for the Prairie region. Levels were lowest in Manitoba, and areas in central to southern Saskatchewan and southeastern and southern Alberta, as well as north Peace River region (Figure 16).

f. Growing season rainfall from April 1 to June 15, 2025 has been below normal across much of the Prairie region, with south central to SE Saskatchewan and southwestern Manitoba having somewhat higher than normal rainfall as well as an area running from the Edmonton region down into southern Alberta (Figure 17).

g. Currently, there are no reports of early season stripe rust development in winter wheat, which would suggest potential overwintering, especially of stripe rust (personal communication: S. Rehman, R. Aboukhaddour, AAFC Lethbridge; and H.R. Kutcher, U. of S.).

4. Overall Rust Risk Assessment and Need For In-Crop Scouting

a. **Crop development and weather**

  i. Prairie winter wheat crops are generally moving into heading and post-heading growth stages, while much of the spring wheat crop is ranging from the seedling to tillering, with some early planted crops moving into stem elongation.

  ii. Temperatures have been somewhat higher than normal for most of the Prairie region since April 1, 2025, and from June 9 to 15, 2025 temperatures have ranged from around 10 to 20°C. These temperatures are generally not conducive to rust development, although cooler temperatures are more conducive for stripe rust versus leaf and stem rust.

  iii. Growing season rainfall for the Prairie region has been generally drier than normal. Recent rainfall in some areas the Prairies could potentially have washed rust spores from the air and into wheat crops, especially winter wheat, while also resulting in canopy moisture conditions that may favour infection and further rust development.

b. **Pacific Northwest** – There were low-moderate numbers of reverse wind trajectories that passed over the PNW region and into the prairies from June 10-16, 2025. Although, stripe rust development continues, it is generally lower versus 2024. **Overall, as of June 19, 2025 the risk of stripe rust appearance from the PNW is generally limited and scouting for this disease in the Prairie region is generally not urgent (Figure 18).** However, Prairie locations with three or more trajectories may be at somewhat higher risk (Table 1).

c. **Texas-Oklahoma corridor** – There was a low number of wind trajectories that passed over the TX/OK region and into the prairies from June 10-16, 2025, while development of stripe and leaf rust of wheat is generally limited. Moreover, most of the crop is mainly matured, with harvest progressing. **Overall, as of June 19, 2025 the risk of stem, leaf, stripe, and crown rust appearance from the Texas-Oklahoma corridor is limited and scouting for these diseases in the Prairie region is not urgent (Figure 19).**

d. **Kansas-Nebraska corridor** – There was a low number of wind trajectory events from the KS/NE region from June 10-16, 2025. **Overall, as of June 19, 2025 the risk of stem, leaf, stripe, and crown rust appearance from the Kansas-Nebraska corridor is generally limited and scouting for these diseases in the Prairies is not urgent (Figure 20).** However, continuing rust (mainly stripe rust) observations and further development, especially in Nebraska, may increase the risk, while the detection of stripe rust in research plots in Wisconsin brings the stripe rust issue closer to the Prairie region.

e. Where farmers or consultants noticed stripe rust development on winter wheat in the fall of 2024, it is recommended to scout winter wheat fields that have resumed growth in spring 2025. Scouting is especially critical where the variety being grown is susceptible/moderately susceptible to stripe rust. Currently, there are no early spring reports of stripe rust on winter wheat.

5. Contacts for rust research and extension expertise

a. **Research**

i. Reem Aboukhaddour, AAFC Lethbridge, AB, reem.aboukhaddour@agr.gc.ca. Stripe rust;
ii. H.R. Kutcher, University of Saskatchewan, Saskatoon, SK, randy.kutcher@usask.ca. Stripe rust;
iii. B. McCallum, AAFC Morden, MB, brent.mccallum@agr.gc.ca. Leaf, stem, and stripe rust;
iv. Xiben Wang, AAFC Brandon/Morden, MB, xiben.wang@agr.gc.ca. Stem and crown rust of oat.
v. S. Rehman, Western Crop Innovations (formerly Olds College/Alberta Agriculture), Field Crop Development Centre, Lacombe, AB, srehman@westerncropinnovations.com. Stripe and leaf rust;
vi. G. Brar, University of Alberta, gurcharn.brar@ualberta.ca. Stripe rust.

b. **Extension**

i. Alberta Ministry of Agriculture and Irrigation, Mike Harding, michael.harding@gov.ab.ca;
ii. Saskatchewan Ministry of Agriculture, Alireza Akhavan, alireza.akhavan@gov.sk.ca;
iii. Manitoba Ministry of Agriculture, TBA.

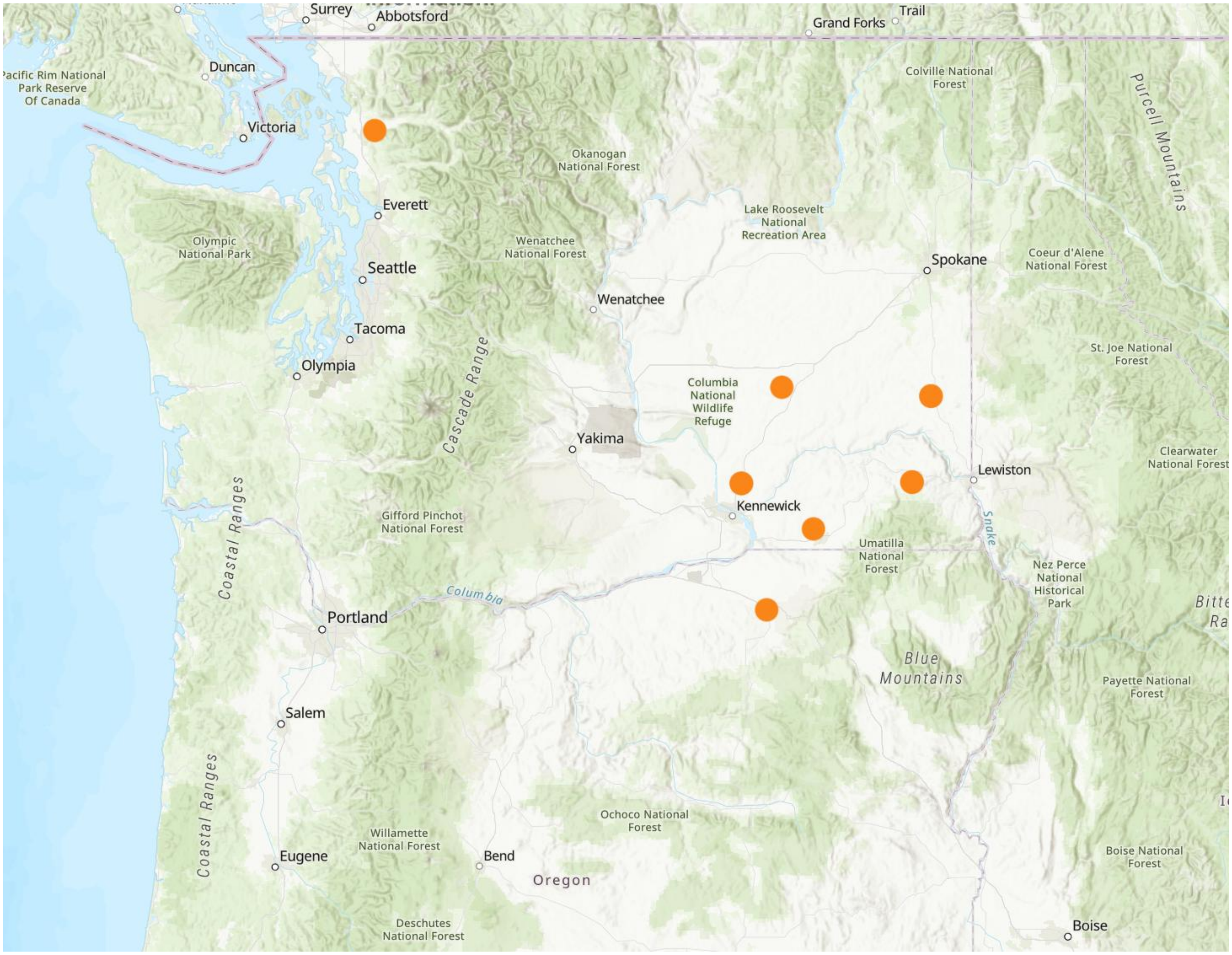


Figure 1a. Pacific Northwest stripe rust observations in wheat, USDA-ARS, Cereal Disease Laboratory, Cereal Rust Observation Maps as of May 30, 2025 (site checked on June 18, 2025 with no changes). https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=7eabb3bc66c045568a406569b731ac6d (note the map is updated as new reports are received).

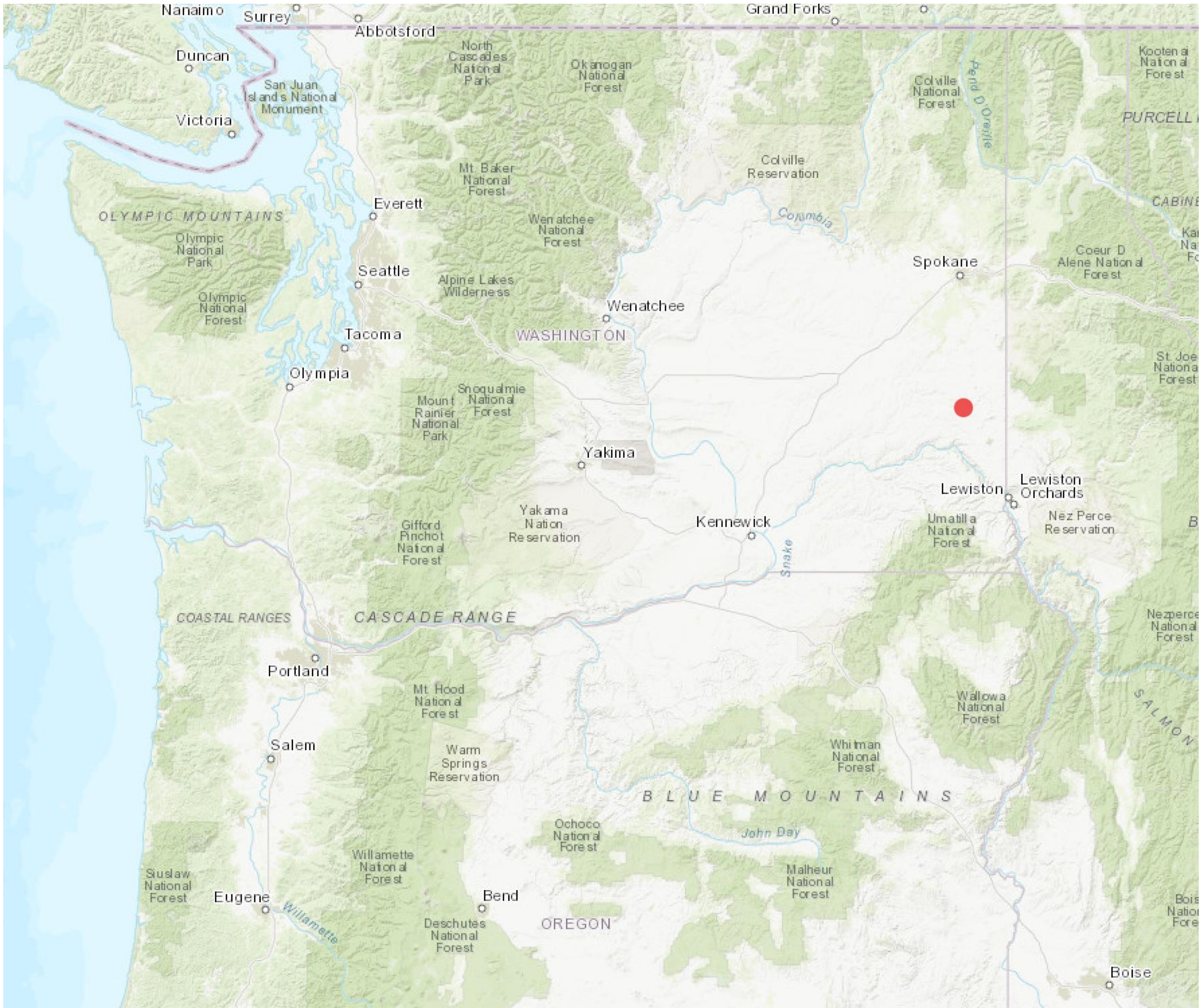


Figure 1b. Pacific Northwest leaf rust observations in wheat, USDA-ARS, Cereal Disease Laboratory, Cereal Rust Observation Maps as of May 30, 2025 (site checked on June 18, 2025 with no changes), https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=5dedcdc1a86443a09189c2b6e5598c54 note the map is updated as new reports are received).

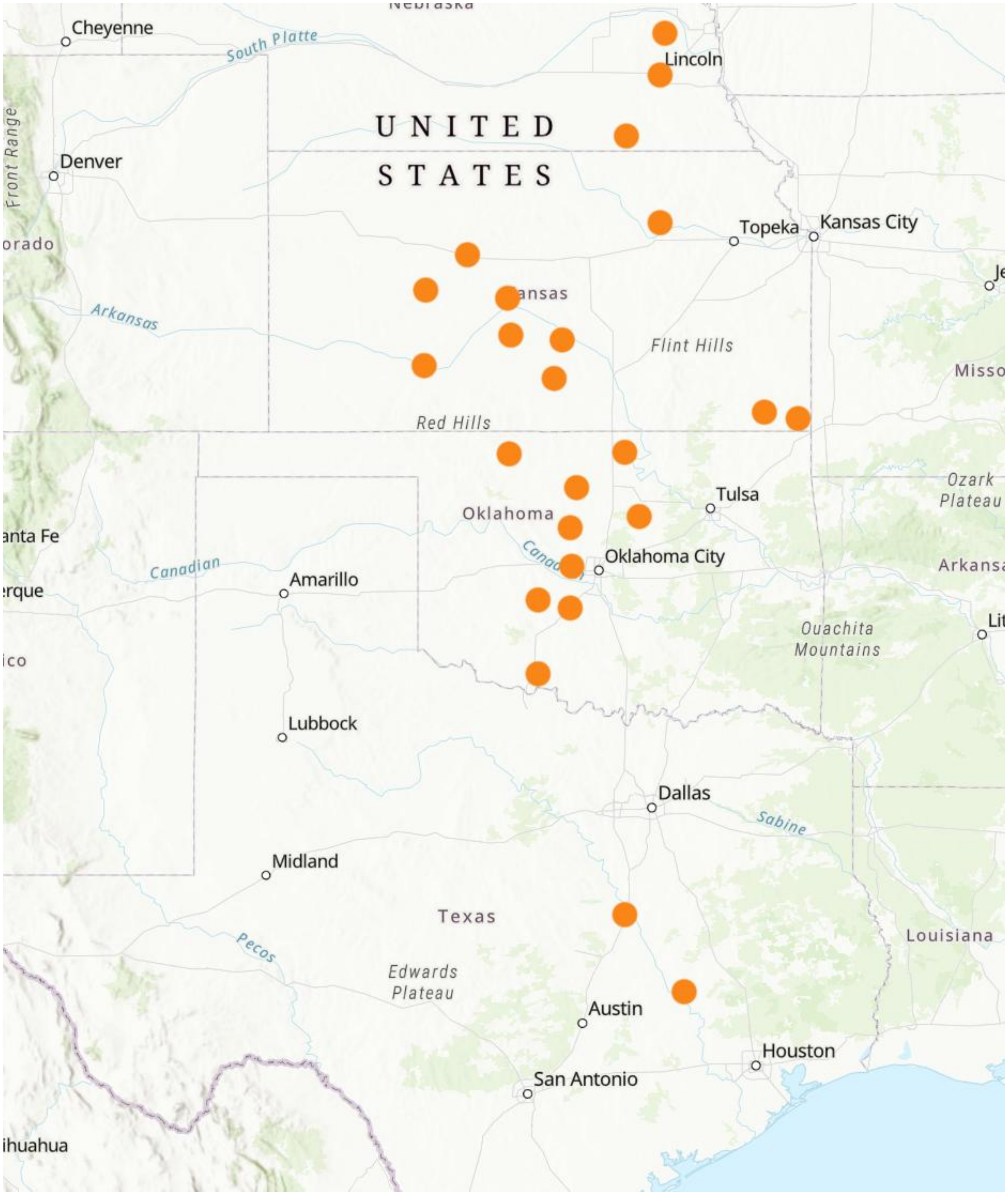


Figure 2. Texas, Oklahoma, and Kansas stripe rust observations in wheat, USDA-ARS, Cereal Disease Laboratory, Cereal Rust Observation Maps as of May 30, 2025 (site checked on June 18, 2025 with no changes), https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=7eabb3bc66c045568a406569b731ac6d (note the map is updated as new reports are received).

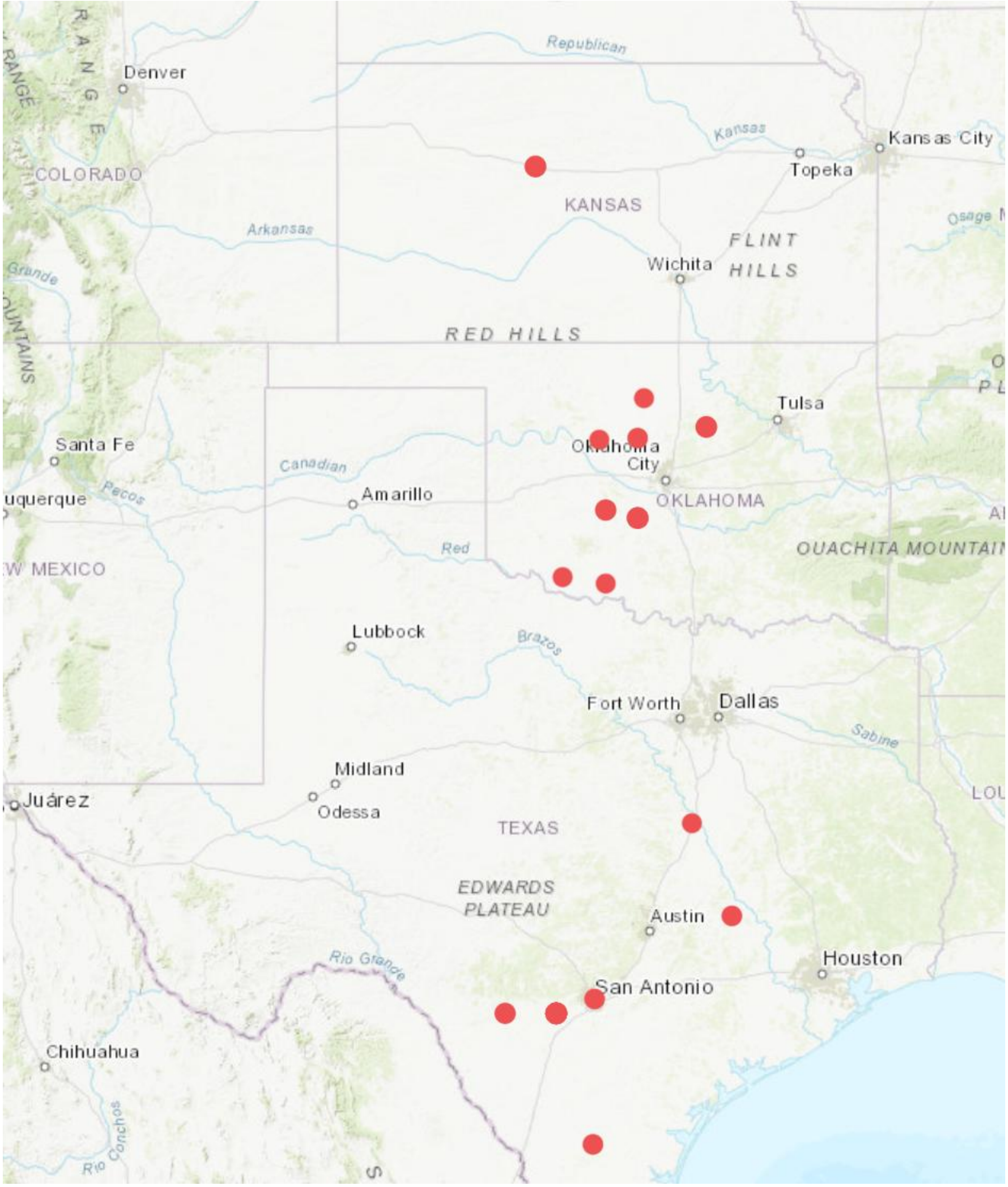


Figure 3. Texas and Oklahoma leaf rust observations/collections in wheat, USDA-ARS, Cereal Disease Laboratory, Cereal Rust Observation Maps as of May 30, 2025 (site checked on June 18, 2025 with no changes), https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=5dedcdc1a86443a09189c2b6e5598c54 (note the map is updated as new reports are received).

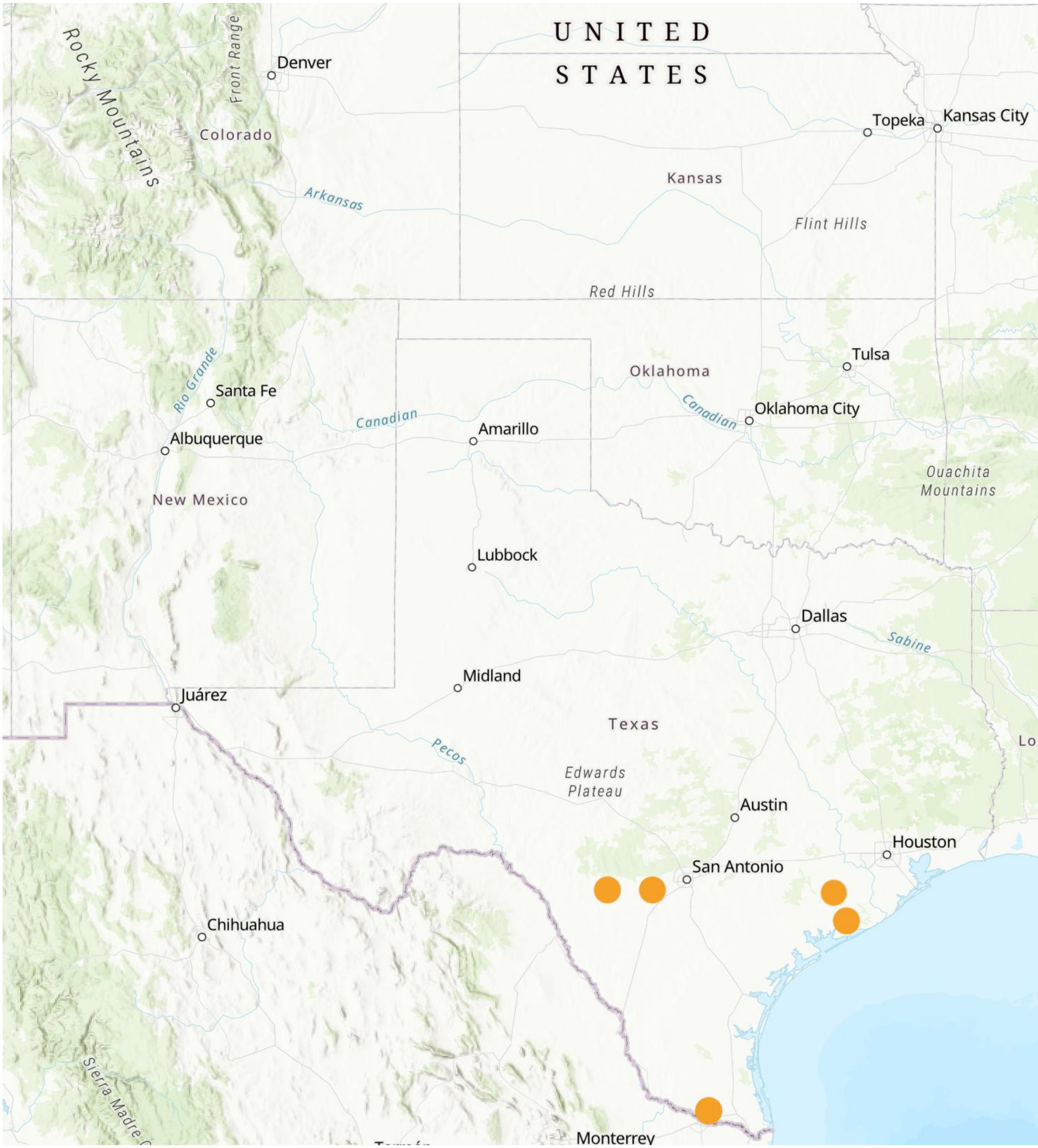


Figure 4. Texas oat crown rust observations/collections in wheat, USDA-ARS, Cereal Disease Laboratory, Cereal Rust Observation Maps as of May 30, 2025 (site checked on June 18, 2025 with no changes), https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=a5bae196706b48fa83a8d5e1b344f802 (note the map is updated as new reports are received).

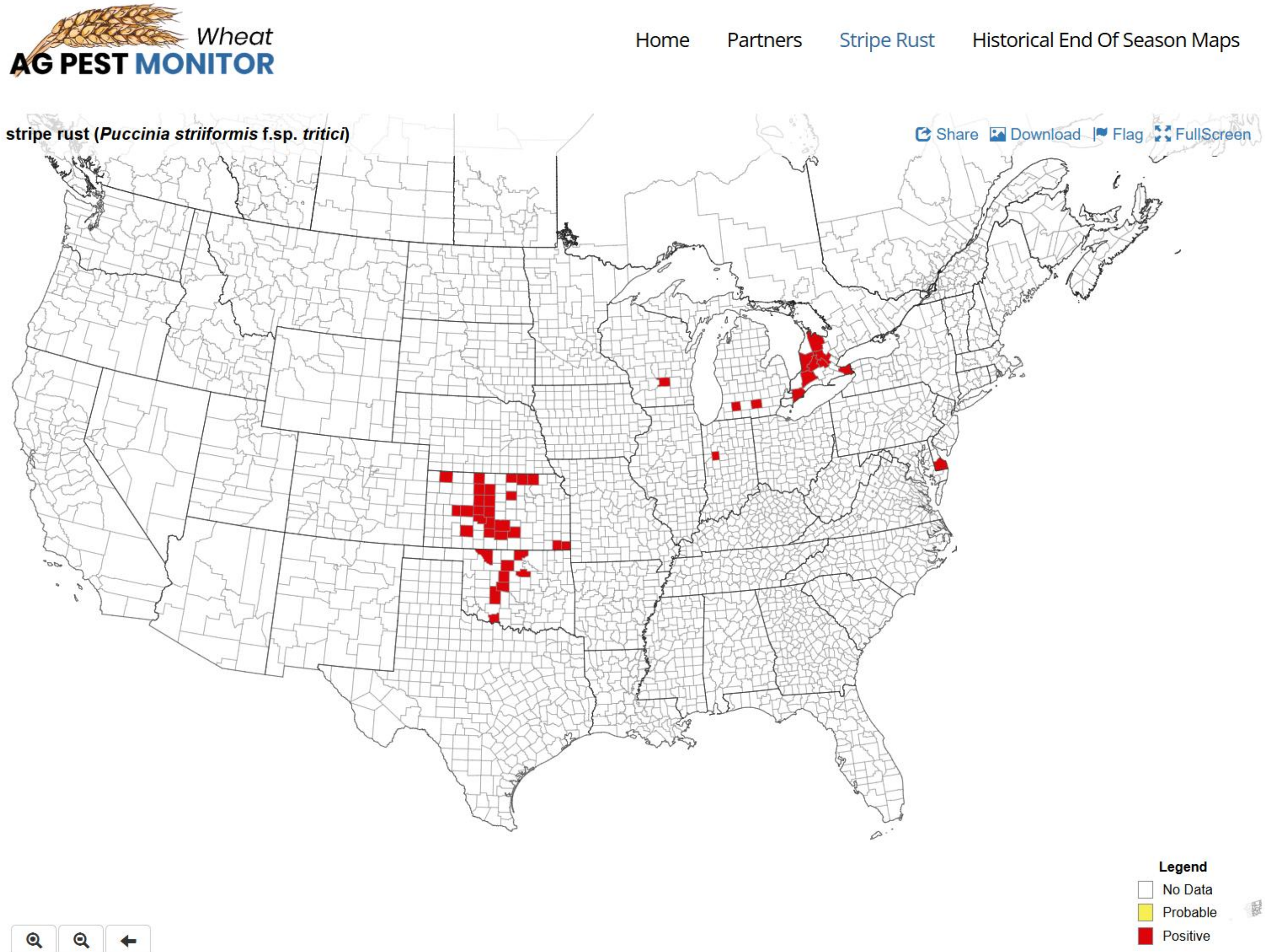
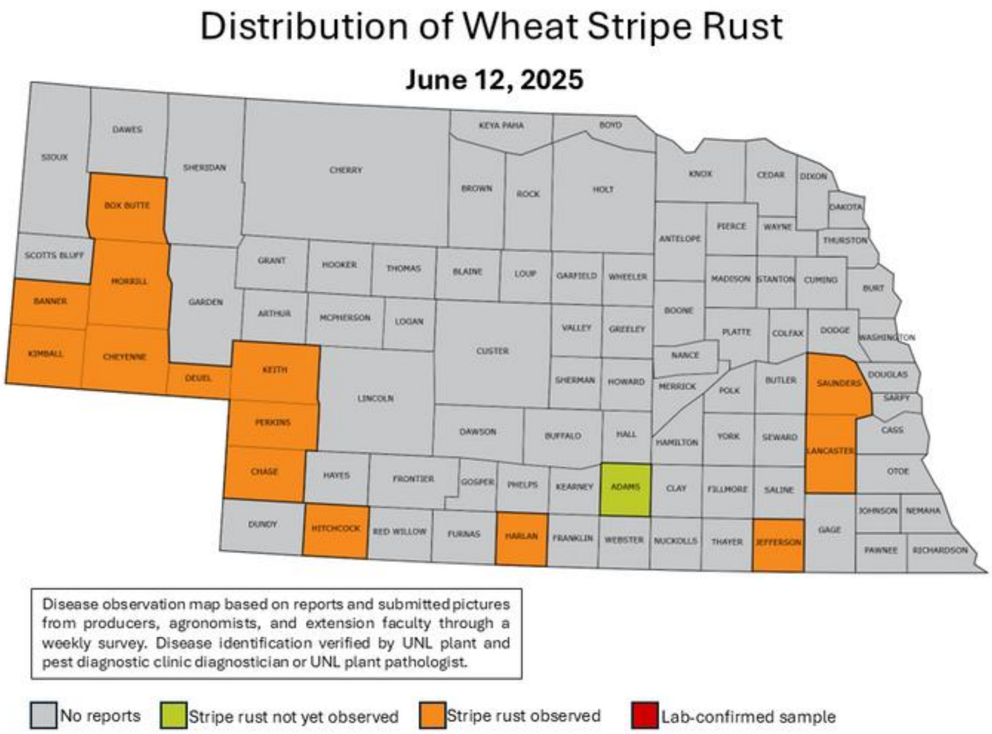


Figure 5. USA stripe rust observations, as of June 19, 2025, courtesy of AG PEST MONITOR: Wheat, https://wheat.agpestmonitor.org/stripe-rust/.



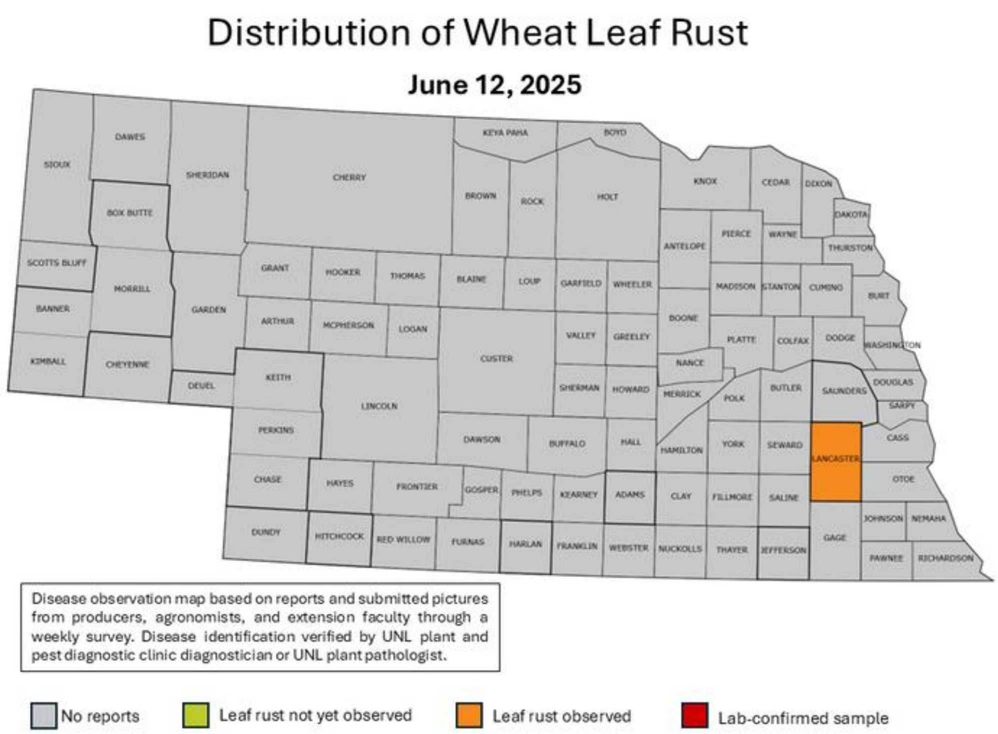


Figure 6. Distribution of stripe (top) and leaf (bottom) rust in Nebraska, USA, as of June 12, 2025 (https://cropwatch.unl.edu/stripe-rust-expands-nebraska-wheat-fields-leaf-rust-remains-isolated/).

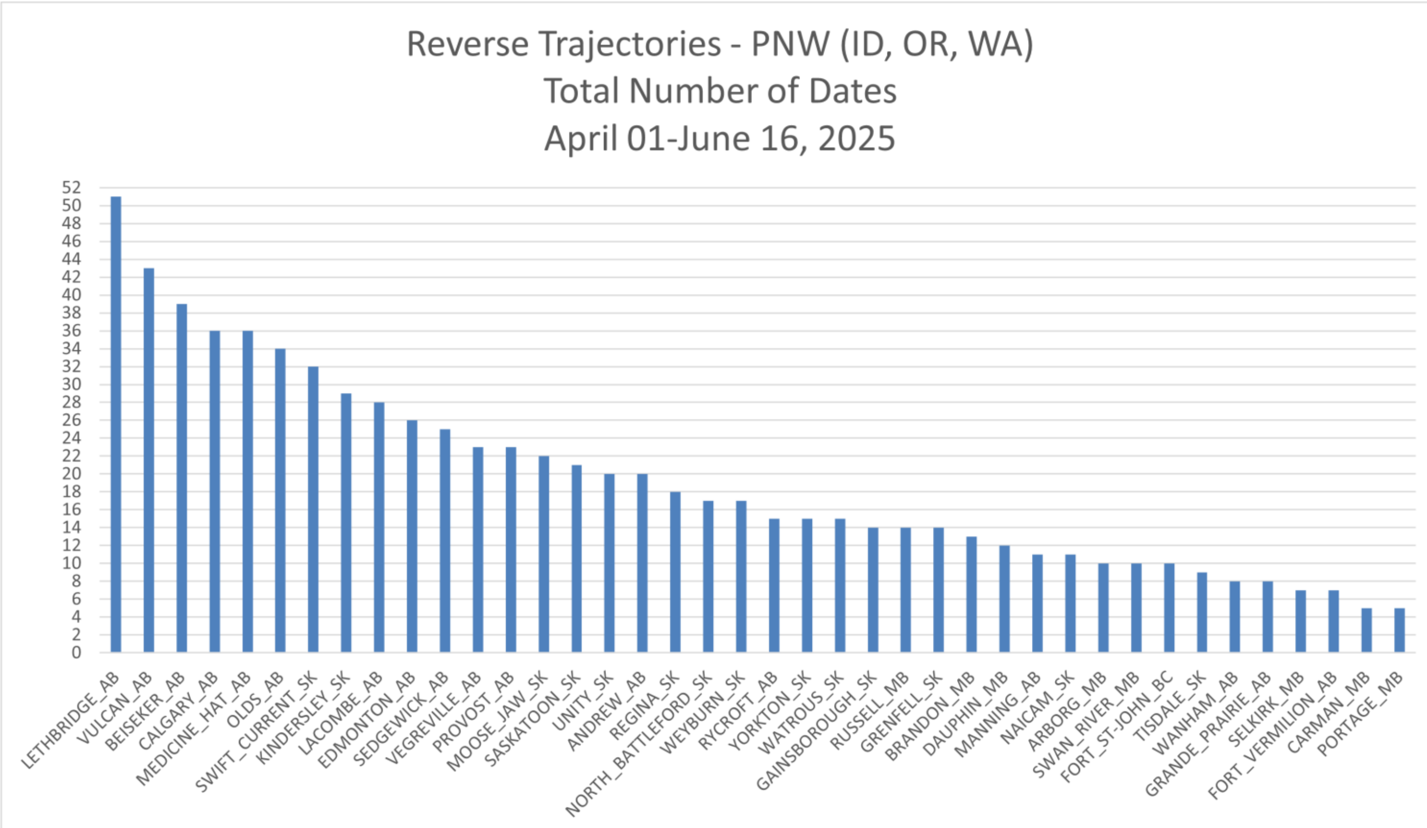


Figure 7. Reverse trajectory locations and number of events, for reverse trajectory events originating from the Pacific Northwest region of the USA, April 1 – June 16, 2025.

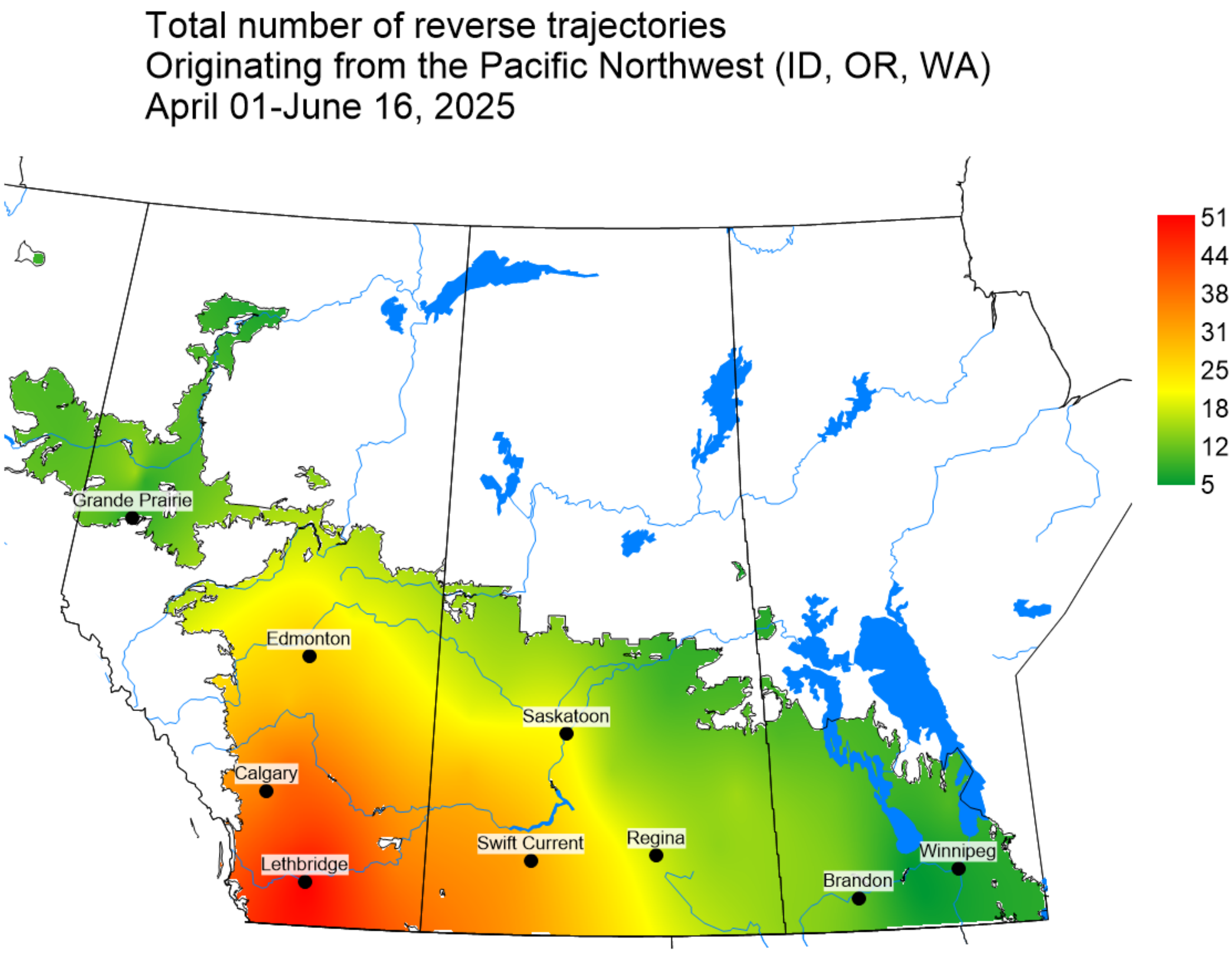


Figure 8. Total number of dates with reverse trajectories originating from the Pacific Northwest region of the USA that have crossed the prairies between April 1 – June 16, 2025.

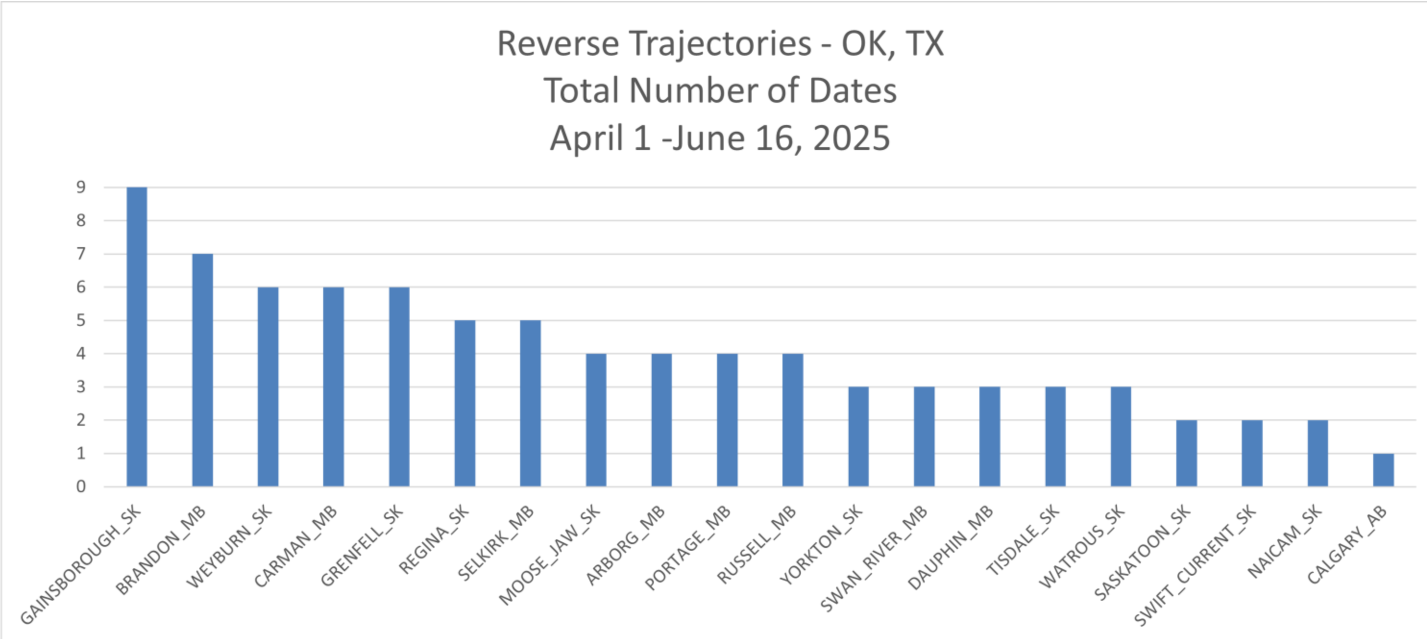


Figure 9. Reverse trajectory locations and number of events, for reverse trajectory events originating from Oklahoma and Texas, USA, April 1 – June 16, 2025.

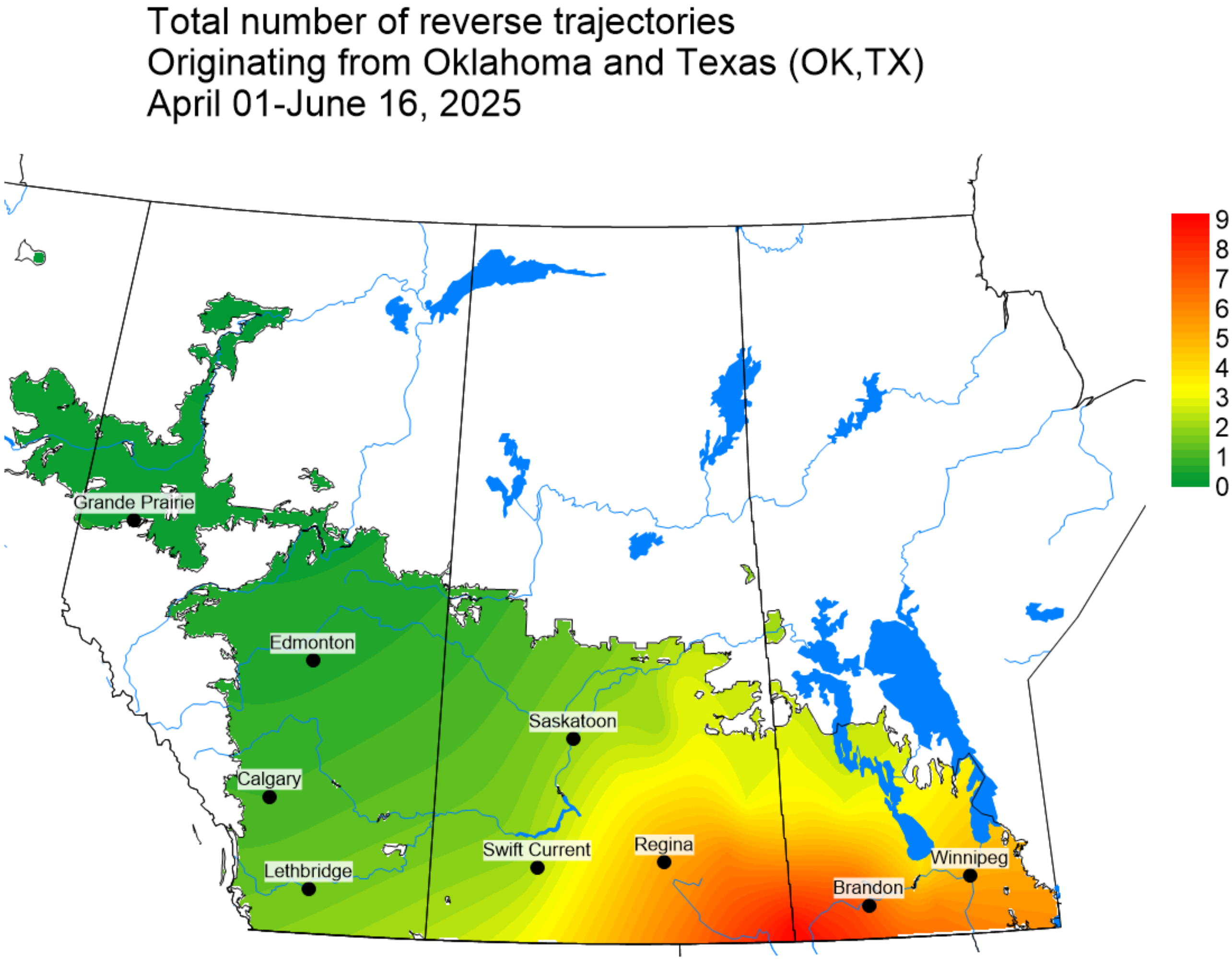


Figure 10. Total number of dates with reverse trajectories originating from Texas and Oklahoma, USA that have crossed the prairies between April 1 – June 16, 2025.

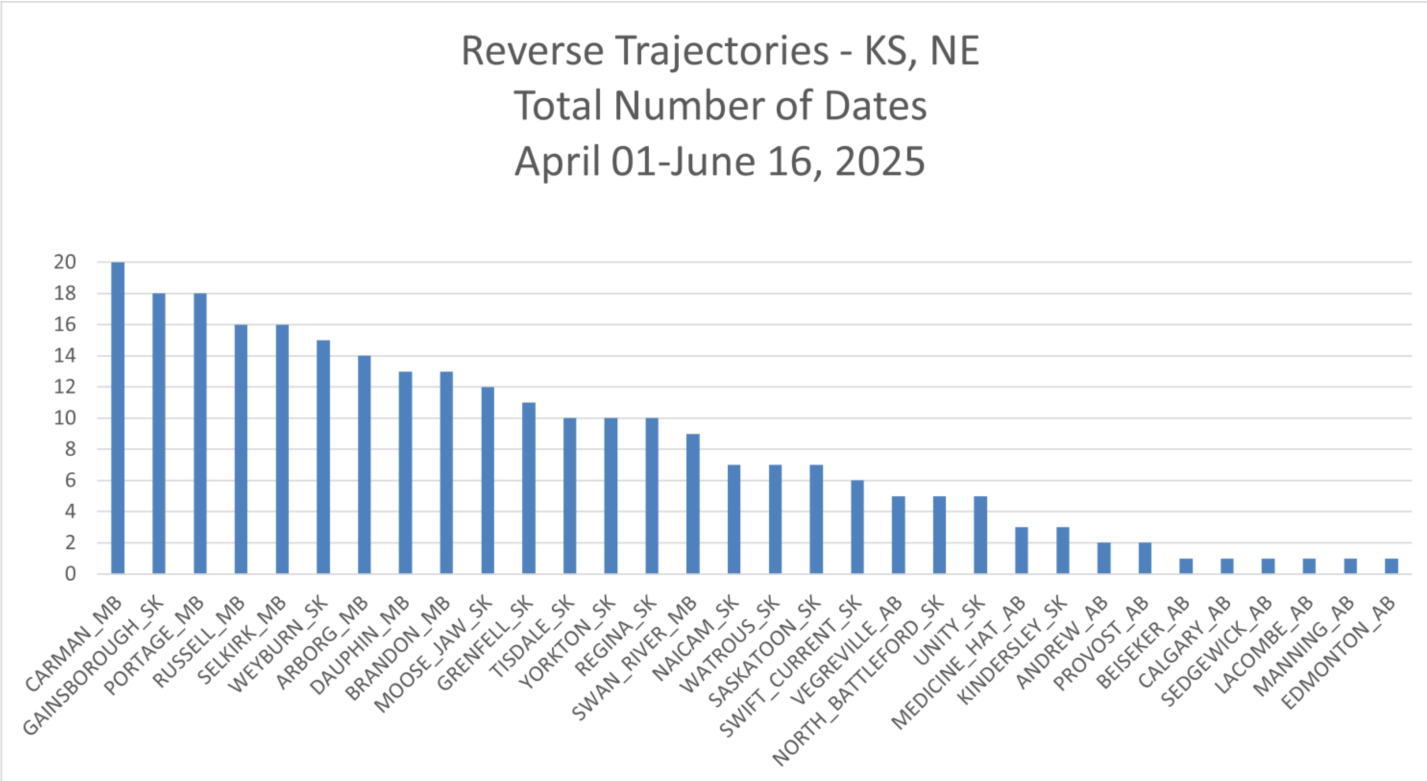


Figure 11. Reverse trajectory locations and number of events, for reverse trajectory events originating from Kansas and Nebraska, USA, April 1 – June 16, 2025.

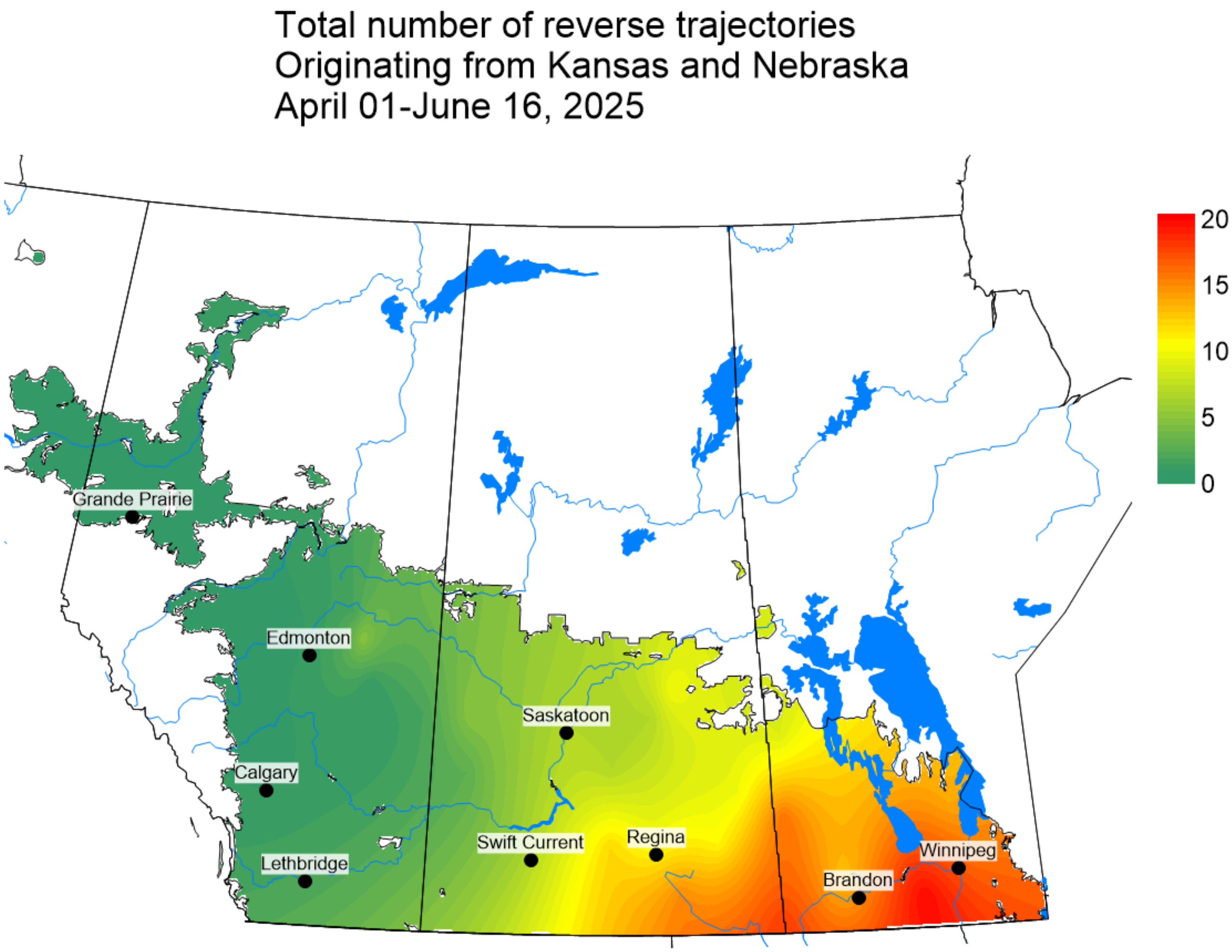


Figure 12. Total number of dates with reverse trajectories originating from Kansas and Nebraska, USA that have crossed the prairies between April 1 – June 16, 2025.

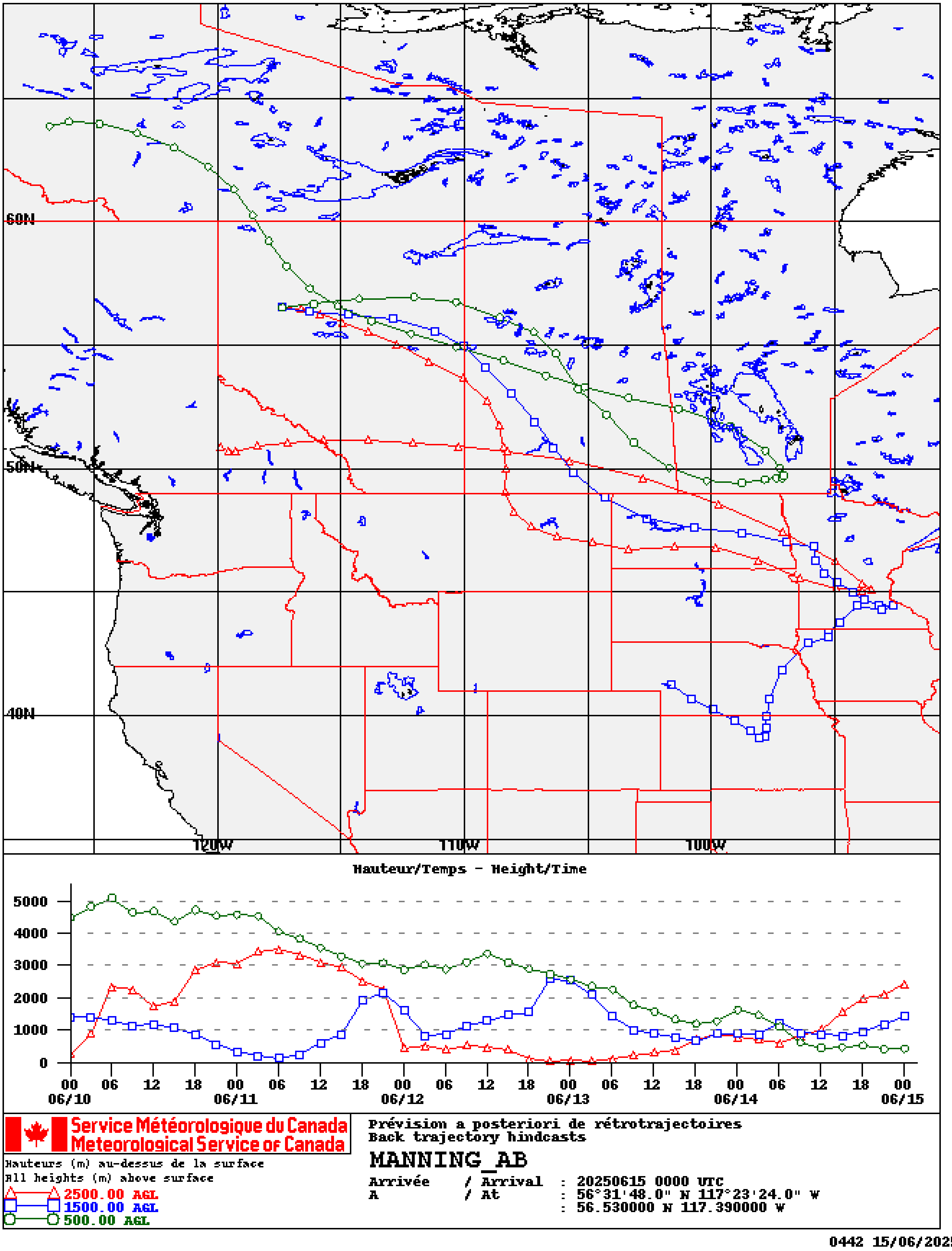


Figure 13. Wind trajectory map from Environment Canada for Manning, AB for June 15, 2025.

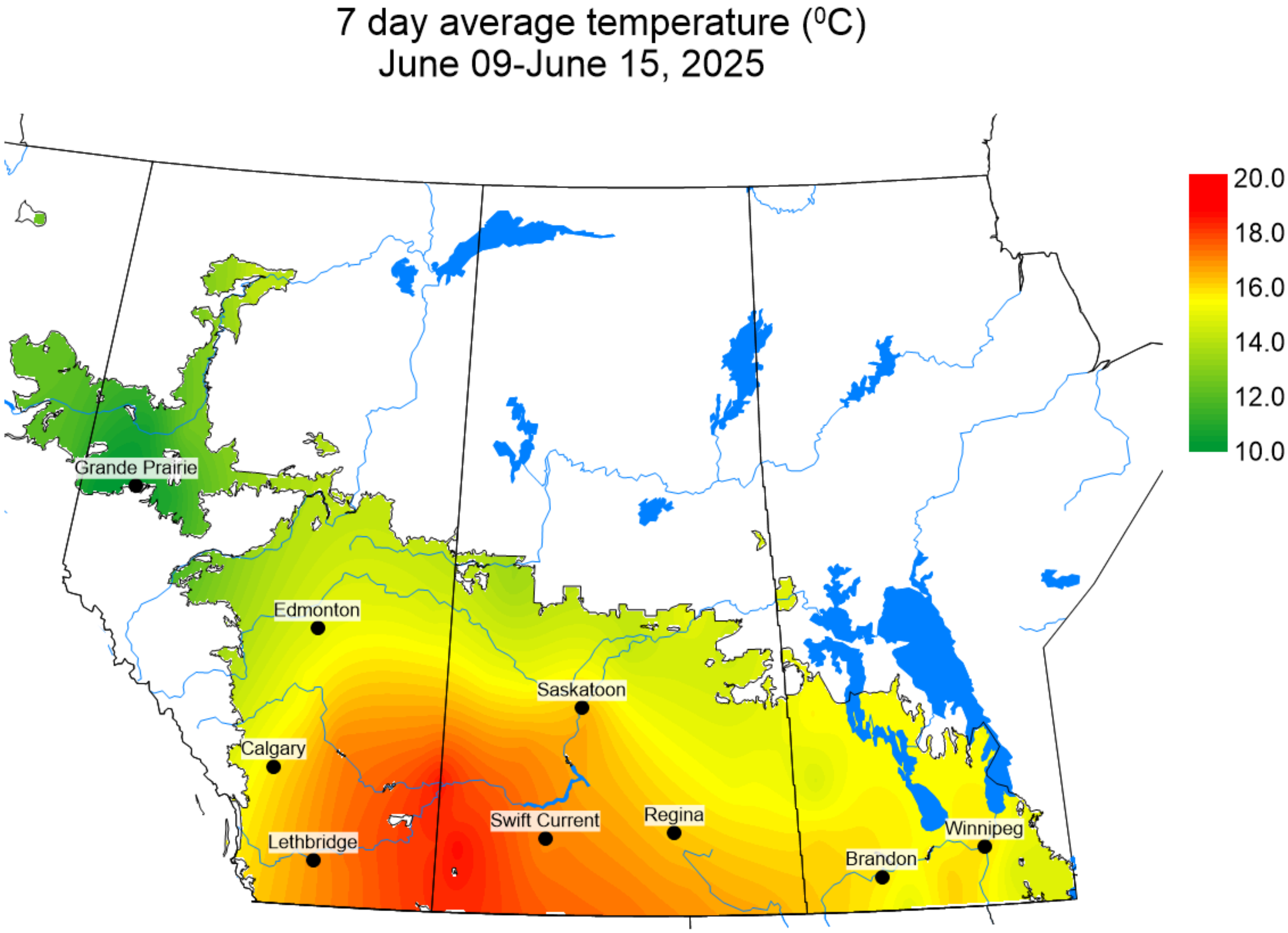


Figure 14. Seven day average temperature (ºC), Prairie region, June 9-15, 2025.

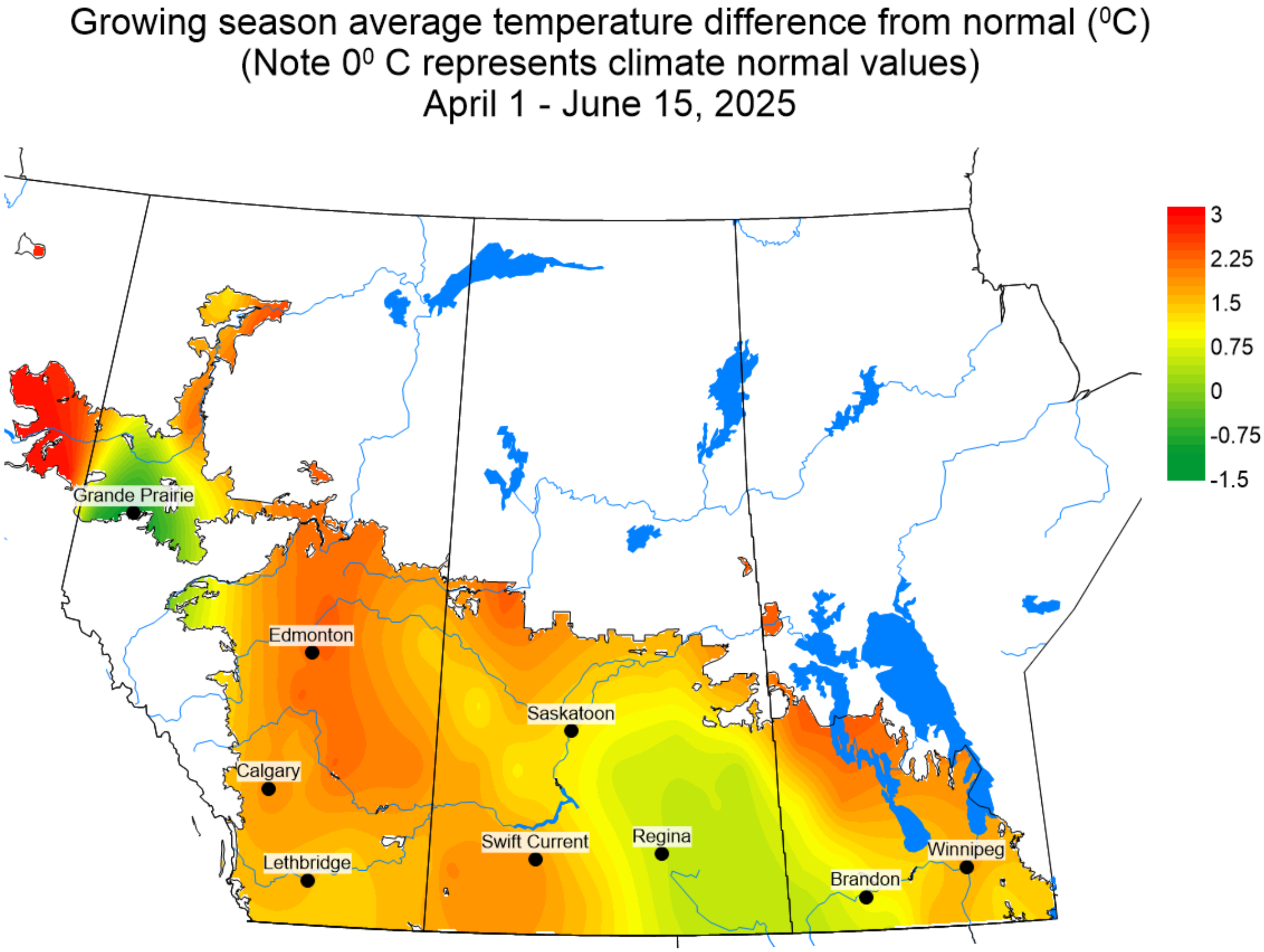


Figure 15. Growing season average temperature (°C) difference from normal, Prairie region, April 1 – June 15, 2025.

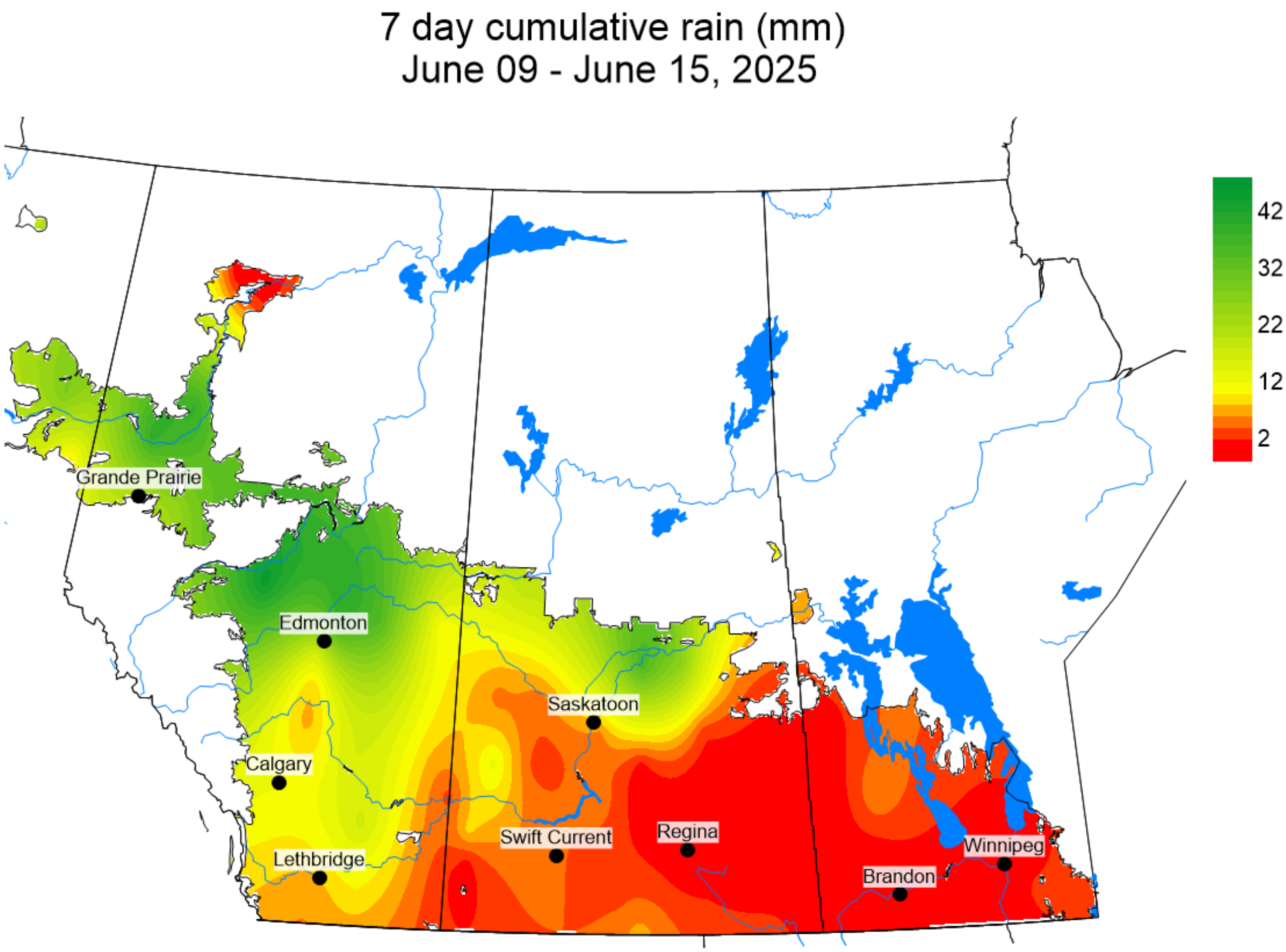


Figure 16. Seven day accumulated rainfall (mm), Prairie region June 9-15, 2025.

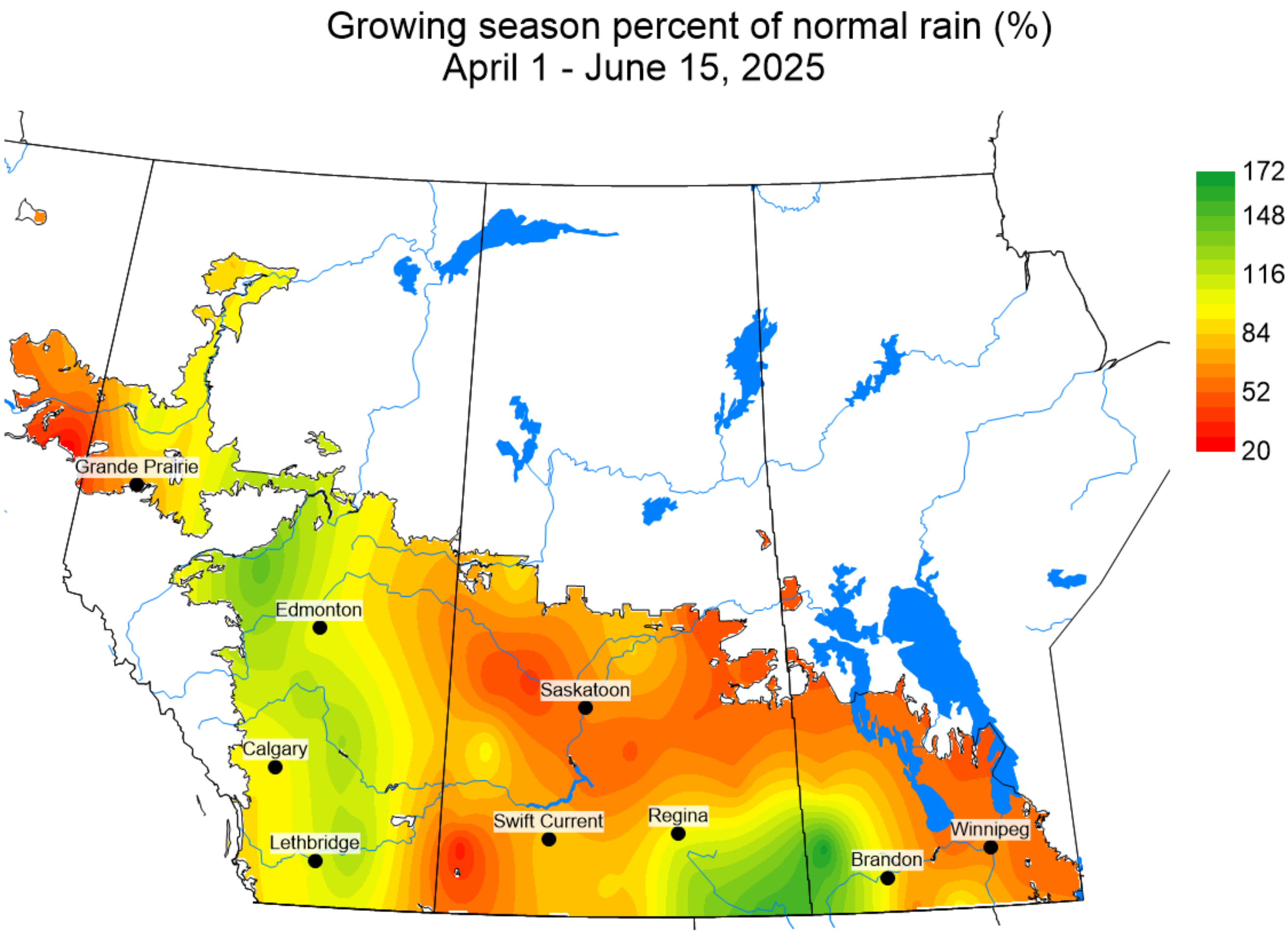


Figure 17. Growing season accumulated rainfall (mm) percent of normal, Prairie region April 1 – June 15, 2025.

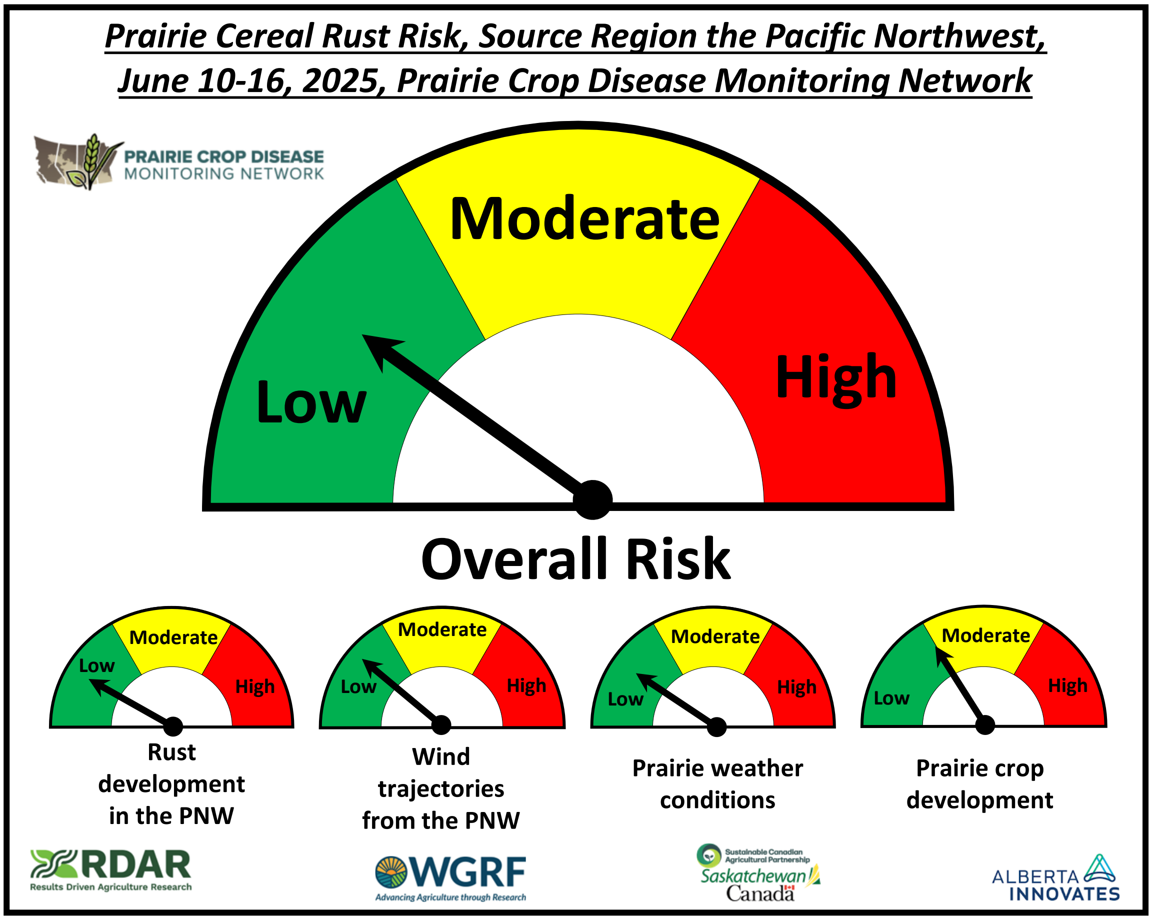


Figure 18. Prairie cereal risk speedometers for stripe rust from the Pacific Northwest, June 10-16, 2025.

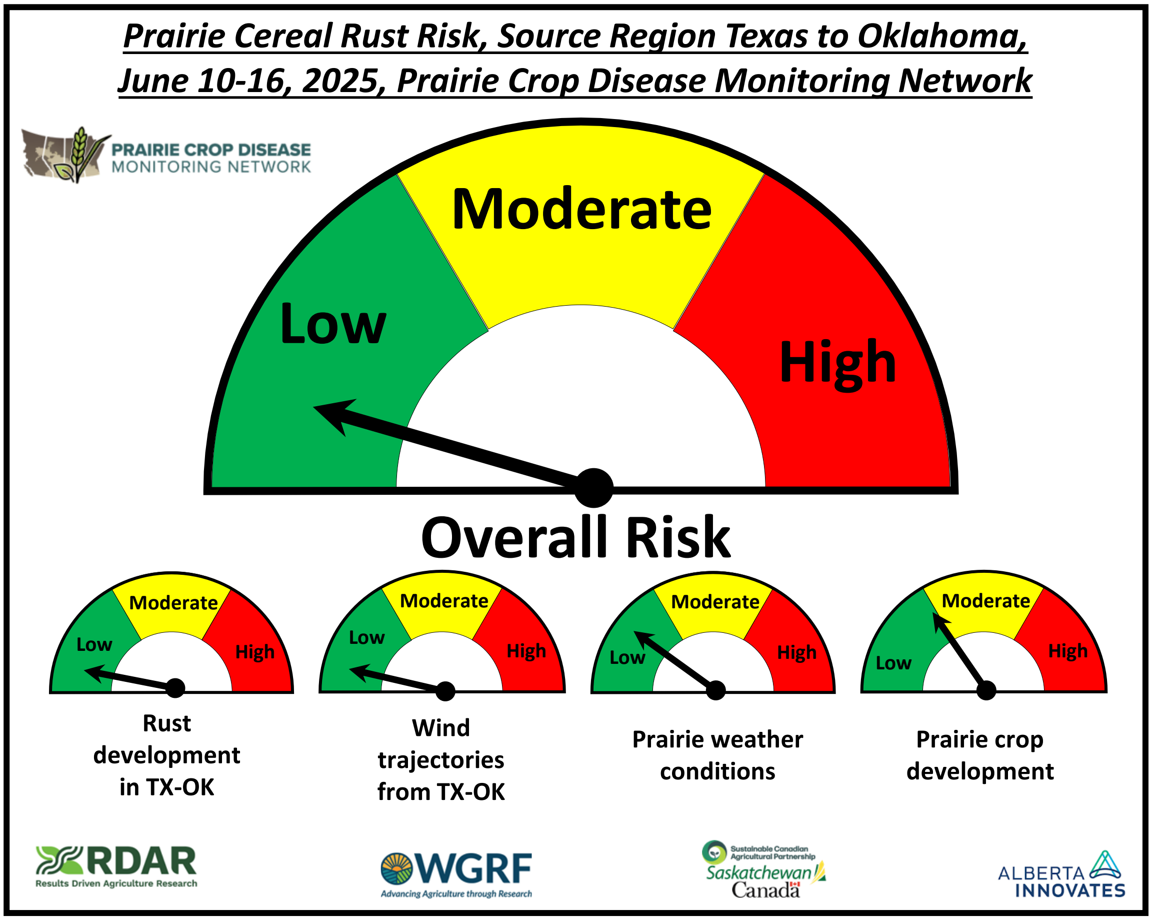


Figure. 19. Prairie cereal risk speedometers for stripe/leaf rust from the Texas to Oklahoma region, June 10-16, 2025.

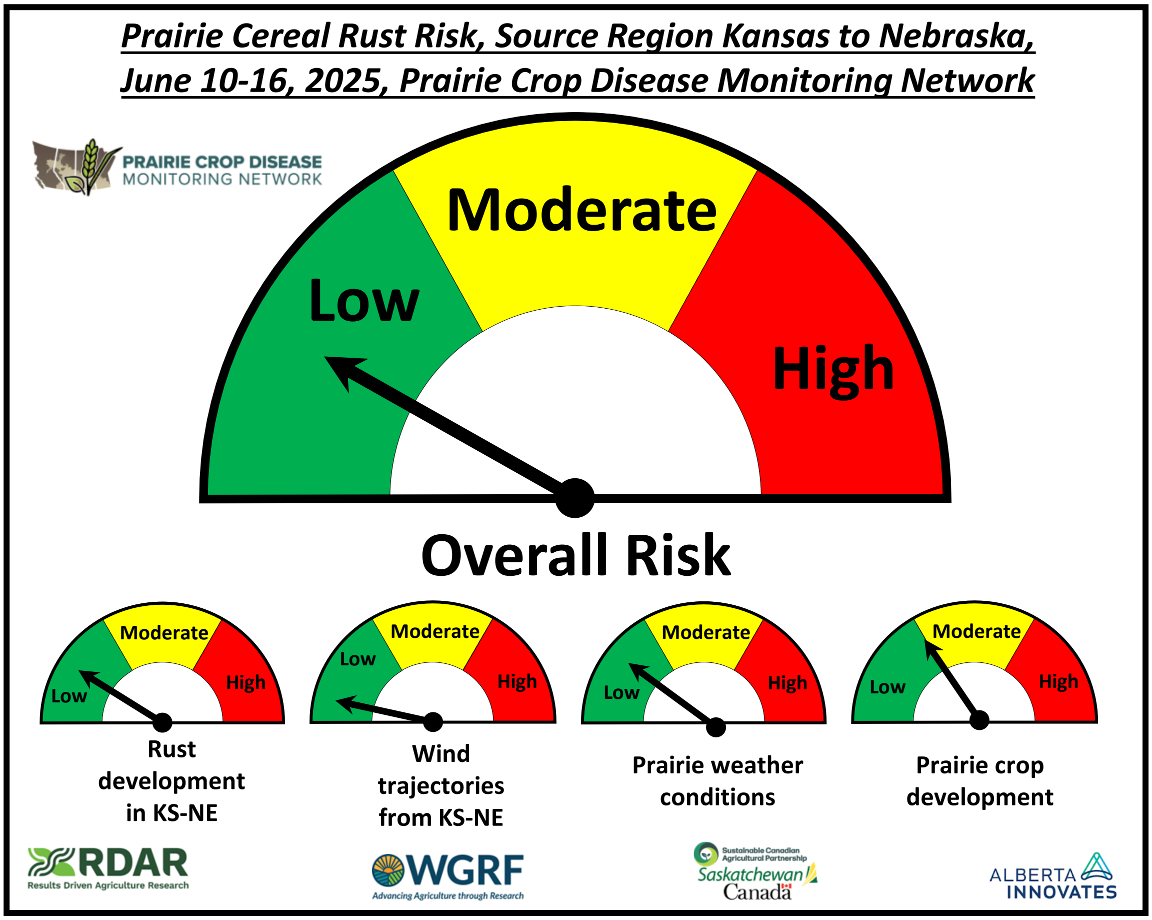


Figure. 20. Prairie cereal risk speedometers for stripe/leaf rust from the Kansas/Nebraska region, June 10-16, 2025.

Table 1. Reverse trajectory locations, arrival dates, and number of events, for reverse trajectory events originating from the Pacific Northwest region of the USA, June 10-June 16, 2025.

Location	Province	10-Jun-25	11-Jun-25	12-Jun-25	13-Jun-25	14-Jun-25	15-Jun-25	16-Jun-25	Total trajectories/ location
VULCAN	AB	0	1	1	1	1	1	1	**6**
BEISEKER	AB	0	0	1	1	1	1	1	**5**
LETHBRIDGE	AB	0	1	1	0	1	1	1	**5**
MEDICINE HAT	AB	0	1	0	1	1	1	1	**5**
KINDERSLEY	SK	0	0	1	0	1	1	1	**4**
SASKATOON	SK	0	0	0	1	1	1	1	**4**
SWIFT CURRENT	SK	0	0	0	1	1	1	1	**4**
CALGARY	AB	0	0	0	0	1	1	1	**3**
MOOSE JAW	SK	0	0	0	0	1	1	1	**3**
OLDS	AB	0	0	0	1	1	0	1	**3**
REGINA	SK	0	0	0	0	1	1	1	**3**
WATROUS	SK	0	0	0	0	1	1	1	**3**
DAUPHIN	MB	0	0	0	0	0	1	1	**2**
LACOMBE	AB	0	0	0	1	1	0	0	**2**
NAICAM	SK	0	0	0	0	1	1	0	**2**
NORTH BATTLEFORD	SK	0	0	0	0	1	1	0	**2**
PROVOST	AB	0	0	0	0	1	0	1	**2**
RUSSELL	MB	0	0	0	0	0	1	1	**2**
UNITY	SK	0	0	0	0	1	0	1	**2**
WEYBURN	SK	0	0	0	0	1	0	1	**2**
YORKTON	SK	0	0	0	0	0	1	1	**2**
ANDREW	AB	0	0	0	0	1	0	0	**1**
ARBORG	MB	0	0	0	0	0	0	1	**1**
BRANDON	MB	0	0	0	0	0	0	1	**1**
CARMAN	MB	0	0	0	0	0	0	1	**1**
EDMONTON	AB	0	0	0	0	1	0	0	**1**
GRENFELL	SK	0	0	0	0	0	0	1	**1**
PORTAGE	MB	0	0	0	0	0	0	1	**1**
SEDGEWICK	AB	0	0	0	0	1	0	0	**1**
SELKIRK	MB	0	0	0	0	0	0	1	**1**
SWAN RIVER	MB	0	0	0	0	0	0	1	**1**
VEGREVILLE	AB	0	0	0	0	1	0	0	**1**
Total trajectories per date		**0**	**3**	**4**	**7**	**22**	**16**	**25**	**77**

Table 2. Reverse trajectory locations, arrival dates, and number of events, for reverse trajectory events originating from Oklahoma and Texas, USA, June 10-June 16, 2025.									
Location	**Province**	**10-Jun-25**	**11-Jun-25**	**12-Jun-25**	**13-Jun-25**	**14-Jun-25**	**15-Jun-25**	**16-Jun-25**	**Total trajectories/ location**
GAINSBOROUGH	SK	0	0	0	0	1	1	0	**2**
BRANDON	MB	0	0	0	0	0	0	1	**1**
CARMAN	MB	0	0	0	0	0	0	1	**1**
MOOSE JAW	SK	0	0	0	0	1	0	0	**1**
NAICAM	SK	0	0	0	0	0	1	0	**1**
PORTAGE	MB	0	0	0	0	0	0	1	**1**
SASKATOON	SK	0	0	0	0	1	0	0	**1**
TISDALE	SK	0	0	0	0	0	1	0	**1**
WEYBURN	SK	0	0	0	0	0	0	1	**1**
Total trajectories per date		**0**	**0**	**0**	**0**	**3**	**3**	**4**	**10**

Table 3. Reverse trajectory locations, arrival dates, and number of events, for reverse trajectory events originating from Kansas and Nebraska, USA, June 10-June 16, 2025.									
Location	**Province**	**10-Jun-25**	**11-Jun-25**	**12-Jun-25**	**13-Jun-25**	**14-Jun-25**	**15-Jun-25**	**16-Jun-25**	**Total trajectories/ location**
GAINSBOROUGH	SK	0	0	0	0	1	1	0	**2**
WEYBURN	SK	0	0	0	0	0	1	1	**2**
ARBORG	MB	1	0	0	0	0	0	0	**1**
BRANDON	MB	0	0	0	0	0	0	1	**1**
CARMAN	MB	0	0	0	0	0	0	1	**1**
GRENFELL	SK	0	0	0	0	1	0	0	**1**
MANNING	AB	0	0	0	0	0	1	0	**1**
MOOSE JAW	SK	0	0	0	0	1	0	0	**1**
NAICAM	SK	0	0	0	0	0	1	0	**1**
PORTAGE	MB	0	0	0	0	0	0	1	**1**
RUSSELL	MB	0	0	0	0	0	0	1	**1**
SASKATOON	SK	0	0	0	0	1	0	0	**1**
TISDALE	SK	0	0	0	0	0	1	0	**1**
UNITY	SK	0	0	0	0	1	0	0	**1**
Total trajectories per date		**1**	**0**	**0**	**0**	**5**	**5**	**5**	**16**