PRAIRIE WIND TRAJECTORY AND CEREAL RUST RISK REPORT for June 17-23, 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. 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.

ii. 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).

iii. 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 26, 2025) are shown in Figures 1-4 with information for the PNW region in Figures 1a and 1b.

iv. 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.

v. Drs. L. Hebb and U. McKelvy, Montana State University (MSU), reported on the recent observations of stripe rust in research trial plots at multiple Montana locations
    1. Symptoms were found on susceptible varieties in test plots in southwestern Montana near Bozeman (Gallatin County), and at the Kalispel Northwestern Agricultural Research Centre (Flathead County). Levels at the Gallatin County trial were generally low to moderate depending on the variety/line, while trace levels were observed at the Kalispel trial site
    2. There was an additional report of trace levels at another research farm (A.H. Post Farm) near Bozeman in southwestern Montana
    3. No symptoms of stripe rust have been observed on winter wheat in trials at Moccasin (central MT), Sidney (eastern MT), Huntley (southern MT).

vi. **As of June 26, 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/).**
    1. The observation of stripe rust in Montana trial sites brings the stripe rust problem much closer to southern Alberta and southwestern to southcentral Saskatchewan and could represent a regional source of this disease.

vii. Currently there are no reports of stripe rust symptoms in Prairie winter or spring wheat crops.

b. **Texas/Oklahoma**

i. **In general, as of June 26, 2025, the Texas/Oklahoma region is no longer a significant source of stripe, leaf, stem and crown rust inoculum for dispersal into the Prairie region of Canada.** As of June 22, 2025, 70% and 35% 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 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, current and future PCDMN risk updates for 2025 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 26, 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 was reported for the first time in 2025 in Nebraska by Drs. Wegulo, Broderick, and Frels in their May 23, 2025 update where it 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. 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. The most recent update from Nebraska indicates continued observations of stripe rust, especially in eastern Nebraska, although its late arrival will likely have minor impacts on winter wheat yields (https://cropwatch.unl.edu/late-season-rust-observed-eastern-nebraska-wheat-limited-yield-impact-expected/). Significant levels of leaf rust were observed at a research site in Lancaster county, while stripe rust infections are starting to mature with the production of the teliospore stage. Surveys indicated that leaf rust was found in two more counties, with a total of three counties being affected, while stripe rust is in 14 counties (Figure 6).

viii. 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.

ix. 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).

x. **As of June 26, 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 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 20% of the crop harvested, 97% coloured, and 75% mature as of June 22, 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 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=887, Figure 7). Most of these trajectories passed over Alberta and western regions of Saskatchewan (Figure 8). For the week of June 17-23, 2025 there have been a total of 114 trajectories for 35 locations up from the 77 reverse trajectories that passed through the Prairie region over 32 locations from June 10-16, 2025 (Table 1). SWIFT CURRENT, SK had six trajectories, while BEISEKER, CALGARY, LETHBRIDGE, MEDICINE HAT, OLDS, PROVOST, and VULCAN, AB, GAINSBOROUGH and WEYBURN, SK, and ARBORG, MB each had five trajectories from the Pacific Northwest from June 17-23, 2025. NAICAM and YORKTON, SK, and CARMAN and RUSSELL, MB each had four trajectories during this same period, with LACOMBE, AB, GRENFELL, KINDERSLEY, REGINA, UNITY, and WATROUS, and BRANDON, PORTAGE and SELKIRK, MB having three trajectories each from the Pacific Northwest for June 17-23, 2025 (Table 1). The remaining 11 locations had 1-2 trajectories from the Pacific Northwest. Interestingly several locations were in Manitoba (Figure 9).

   i. **As of June 23, 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** – Given that Texas and Oklahoma crops are mature and being harvested, this region is no longer a significant of wind trajectories for dispersal of rust pathogens into the Prairie region of Canada (https://quickstats.nass.usda.gov/results/6973F6E0-3DE0-3153-BEBB-489BD4DB599D).

d. **Nebraska and Kansas** – A total of 281 reverse trajectories, originating from Kansas and Nebraska have crossed the prairies, primarily Manitoba and Saskatchewan (April 1 – June 23, 2025) (Figure 10). Most of these trajectories passed over Manitoba and central to eastern Saskatchewan (Figure 11). From June 17-23, 2025, there were a total of 18 trajectories over nine Prairie locations, with SELKIRK and CARMAN, MB having four and three trajectories, respectively, while the remaining seven locations had 1-2 trajectories per location (Table 2).

   i. **As of June 23, 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 into the flowering and grain filling stages, with some Manitoba crops setting seed (https://tinyurl.com/4h4d7xzf, https://tinyurl.com/ycxzhssa).

b. Spring wheat – Across the prairie region spring wheat has been planted with crops generally moving into the stem elongation and flag head emergence stages, although some early seeded fields are starting to head (https://tinyurl.com/4h4d7xzf; https://tinyurl.com/2rrdm95z; https://tinyurl.com/ycxzhssa). There are reports of poor spring and fall seeded crop development, mainly due to dry conditions, although heavy rain and hall have been issues in some regions (https://tinyurl.com/2rrdm95z).

c. This past week (June 16-22, 2025) the average temperature across the Prairies ranged from around 10 to 20°C, with the coolest areas being in Alberta and northern cropping areas of Saskatchewan (Figure 12).

d. Growing season temperatures (April 1-June 22, 2025) have been above average for large areas of the Prairies, although the BC Peace was up to 3^{o}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 13).

e. Accumulated rainfall over the past week (June 16-22, 2025) ranged from around 0 to over 100 mm for the Prairie region. Levels were lowest in Manitoba, and areas in central to southern Saskatchewan and northern and Peace River regions of Alberta, as well as north Peace River region (Figure 14). Wetter areas included the Calgary region south to Lethbridge, east-central Alberta and central to west-central Saskatchewan.

f. Growing season rainfall from April 1 to June 22, 2025 has been below normal across much of the Prairie region, with south central to SE Saskatchewan and southwestern Manitoba and large areas of southern to the Edmonton region having somewhat higher than normal rainfall (Figure 15).

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 the post-heading and grain filling growth stages, while much of the spring wheat crop is ranging from the tillering to stem elongation and flag leaf emergence, with some early planted crops moving into head emergence.

   ii. Temperatures have been somewhat higher than normal for most of the Prairie region since April 1, 2025, and from June 16-22, 2025 temperatures have ranged from around 10 to 20°C. These temperatures are generally not conducive to leaf and stem 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 moderate numbers of reverse wind trajectories that passed over the PNW region and into the prairies from June 16-23, 2025. Although, stripe rust development continues, it is generally lower versus 2024. **Overall, as of June 26, 2025 the risk of stripe rust appearance from the PNW is generally low and scouting for this disease in the Prairie region is generally not urgent (Figure 16).** However, Prairie locations with three or more trajectories may be at somewhat higher risk (Table 1). The late development and low levels of stripe rust in commercial PNW fields has had an overall dampening effect on the rust risk from the PNW.

c. However, the recent detection of stripe rust in research plots at multiple locations in Montana brings the stripe rust issue adjacent to the Prairie region. These observations bring the stripe rust problem much closer to southern Alberta and southern Saskatchewan and could represent a regional source of this disease.

d. An assessment of the number of reverse trajectories for at risk Prairie location was done for air parcels that previously moved over Montana from June 17-23, 2025 (Table 3). A total of 114 trajectories for 35 locations passed over Montana and ended up in the Prairie region. SWIFT CURRENT, SK had a total of 6 trajectories from June 17-23, 2025, while BEISEKER, CALGARY, LETHBRIDGE, MEDICINE HAT, OLDS, PROVOST, and VULCAN, AB, GAINSBOROUGH and WEYBURN, SK, and ARBORG, MB each had five trajectories. NAICAM and YORKTON, SK, and CARMAN and RUSSELL, MB each had four trajectories that previously passed over Montana (Table 3). LACOMBE, AB, GRENFELL, KINDERSLEY, REGINA, UNITY and WATROUS, SK, and PORTAGE and SELKIRD, MB each had three trajectories from Montana, while the remaining 11 locations had 1-2 trajectories from Montana (Table 3).

e. Prairie wheat growers in these areas, especially where >=three trajectories occurred from Montana are encouraged to be on the look out for symptoms of stripe rust, **especially in fields planted to susceptible to moderately susceptible varieties.** For information on cereal variety reactions for stripe rust, please consult your Provincial variety guides:

   i. Alberta
   ii. Saskatchewan
   iii. Manitoba.

f. **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 26, 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 17).** 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.

g. 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.

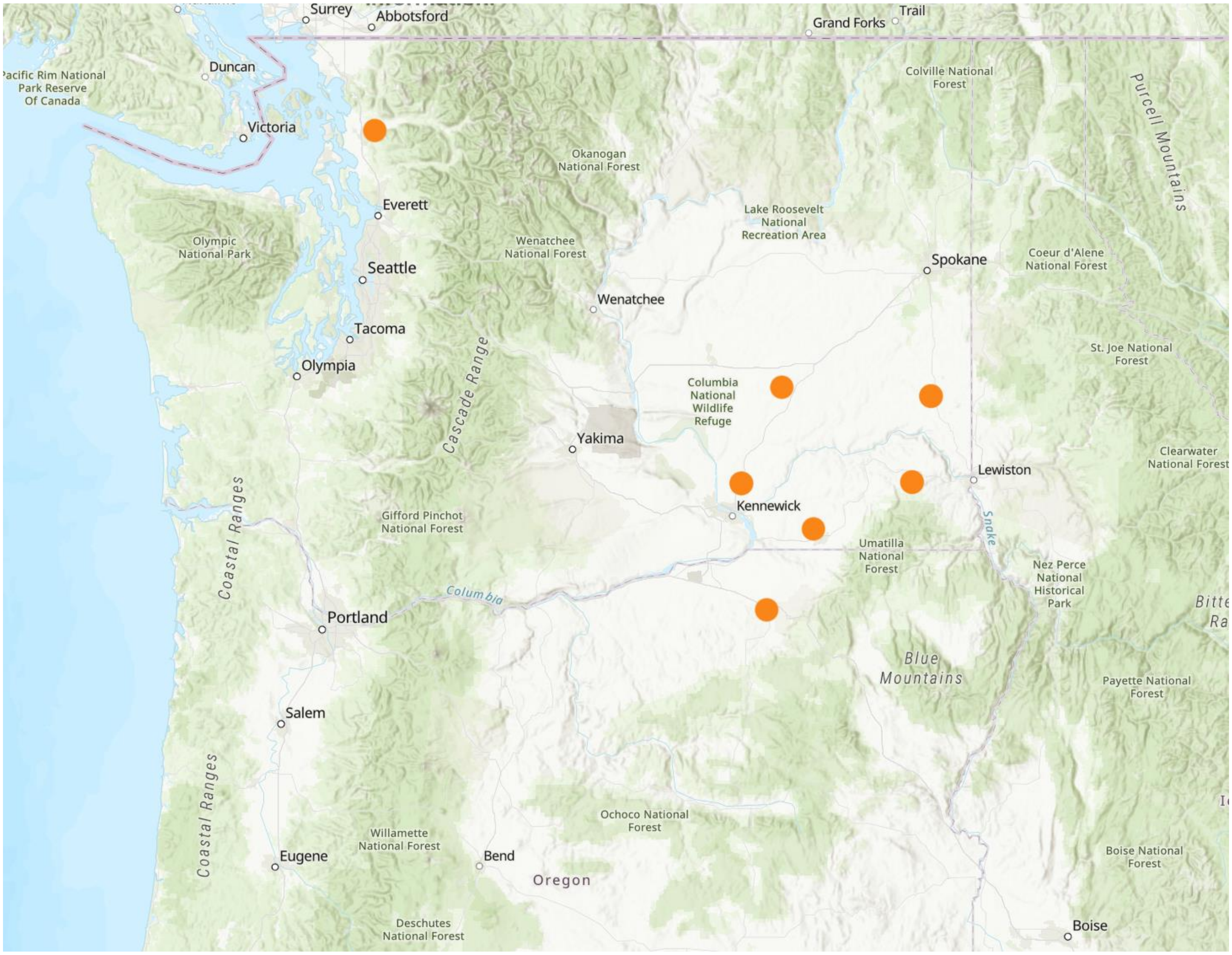


Figure 1a. Pacific Northwest stripe rust observations in wheat, USDA-ARS, Cereal Disease Laboratory, Cereal Rust Observation Maps as of May 30, 2025 (site checked on June 26, 2025 with no changes). https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=7eabb3bc66c045568a406569b731ac6d (note the map is updated as new reports are received).

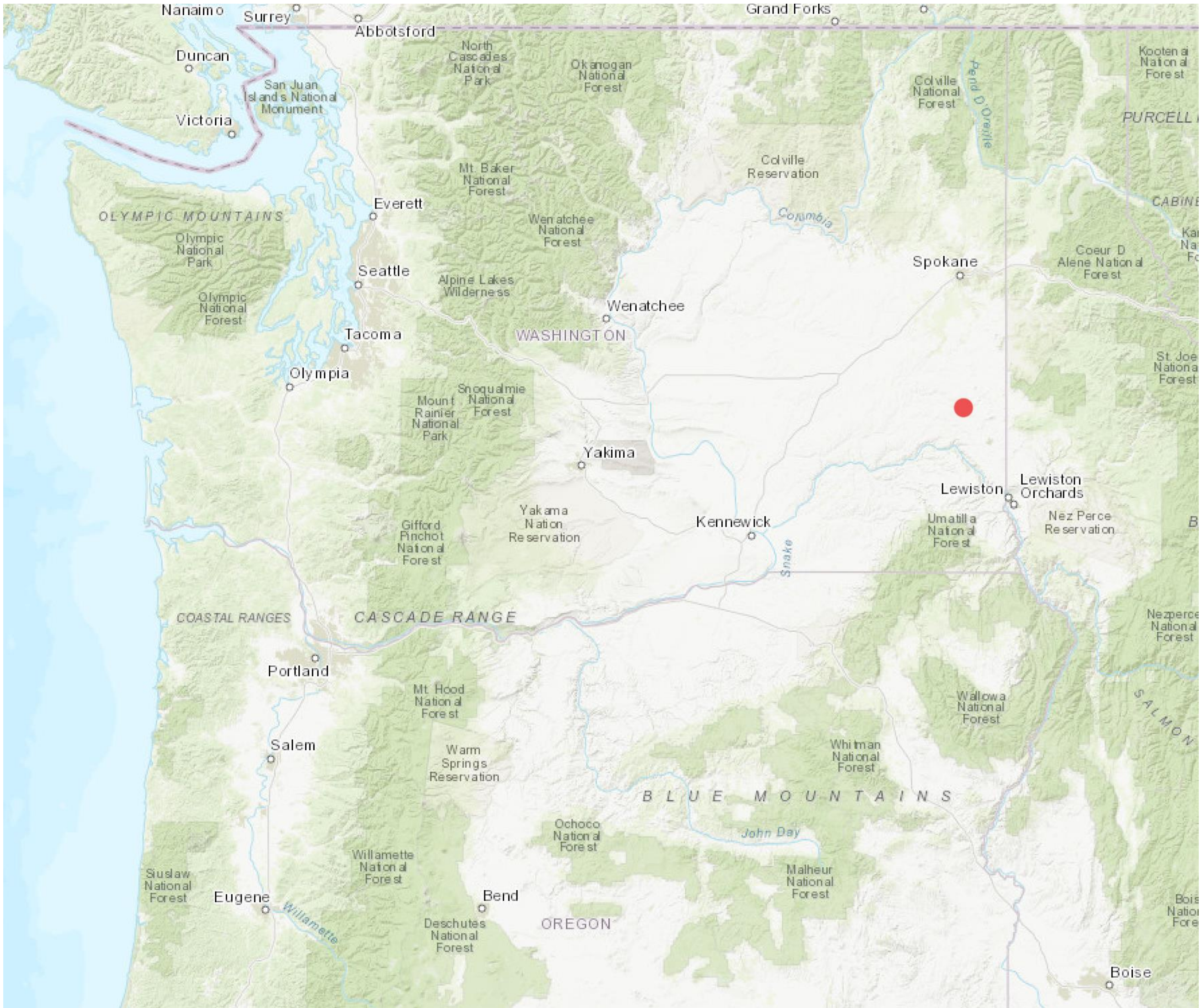


Figure 1b. Pacific Northwest leaf rust observations in wheat, USDA-ARS, Cereal Disease Laboratory, Cereal Rust Observation Maps as of May 30, 2025 (site checked on June 26, 2025 with no changes), https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=5dedcdc1a86443a09189c2b6e5598c54 note the map is updated as new reports are received).

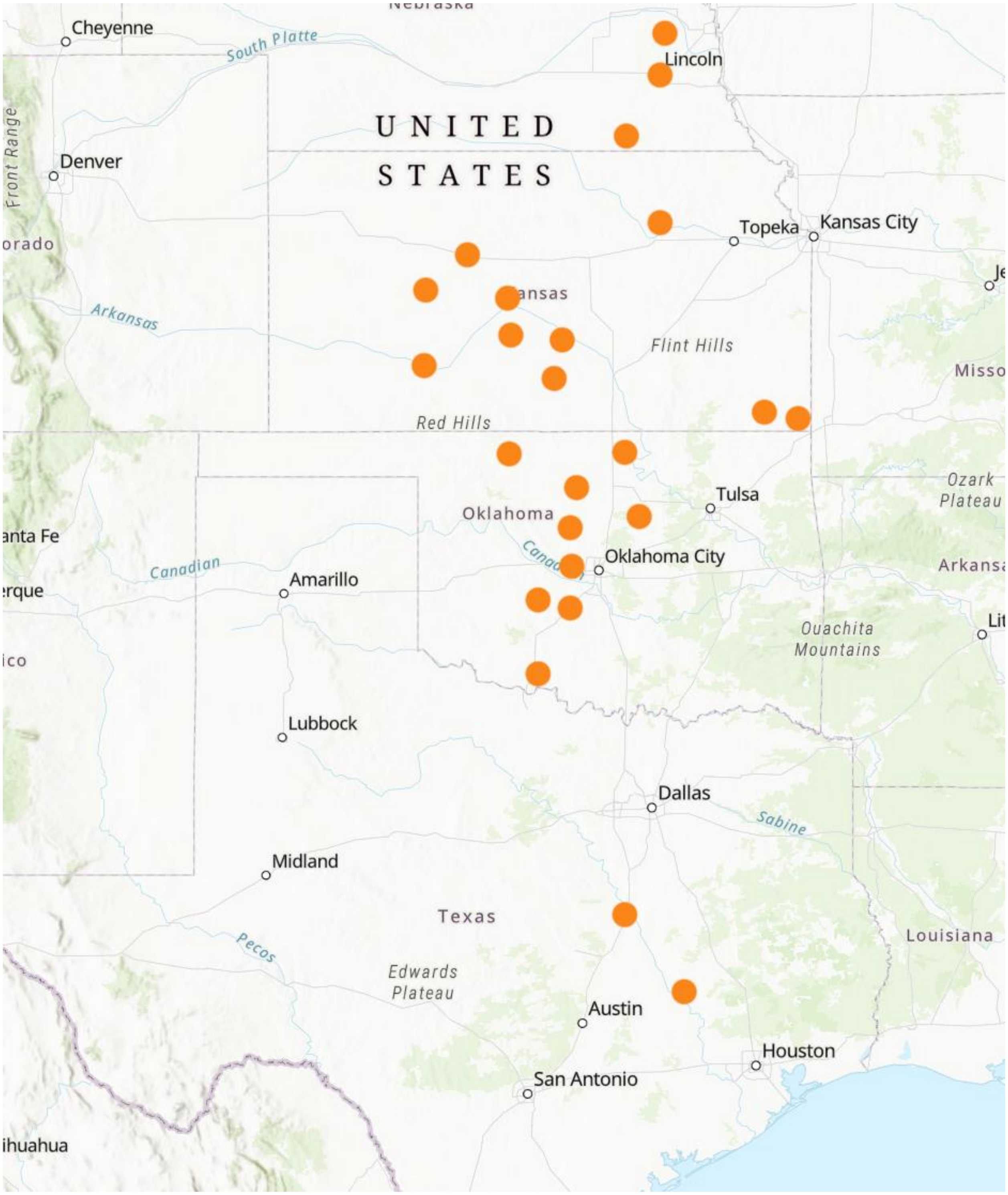


Figure 2. Texas, Oklahoma, and Kansas stripe rust observations in wheat, USDA-ARS, Cereal Disease Laboratory, Cereal Rust Observation Maps as of May 30, 2025 (site checked on June 26, 2025 with no changes), https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=7eabb3bc66c045568a406569b731ac6d (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 June 26, 2025, https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=5dedcdc1a86443a09189c2b6e5598c54 (note the map is updated as new reports are received).

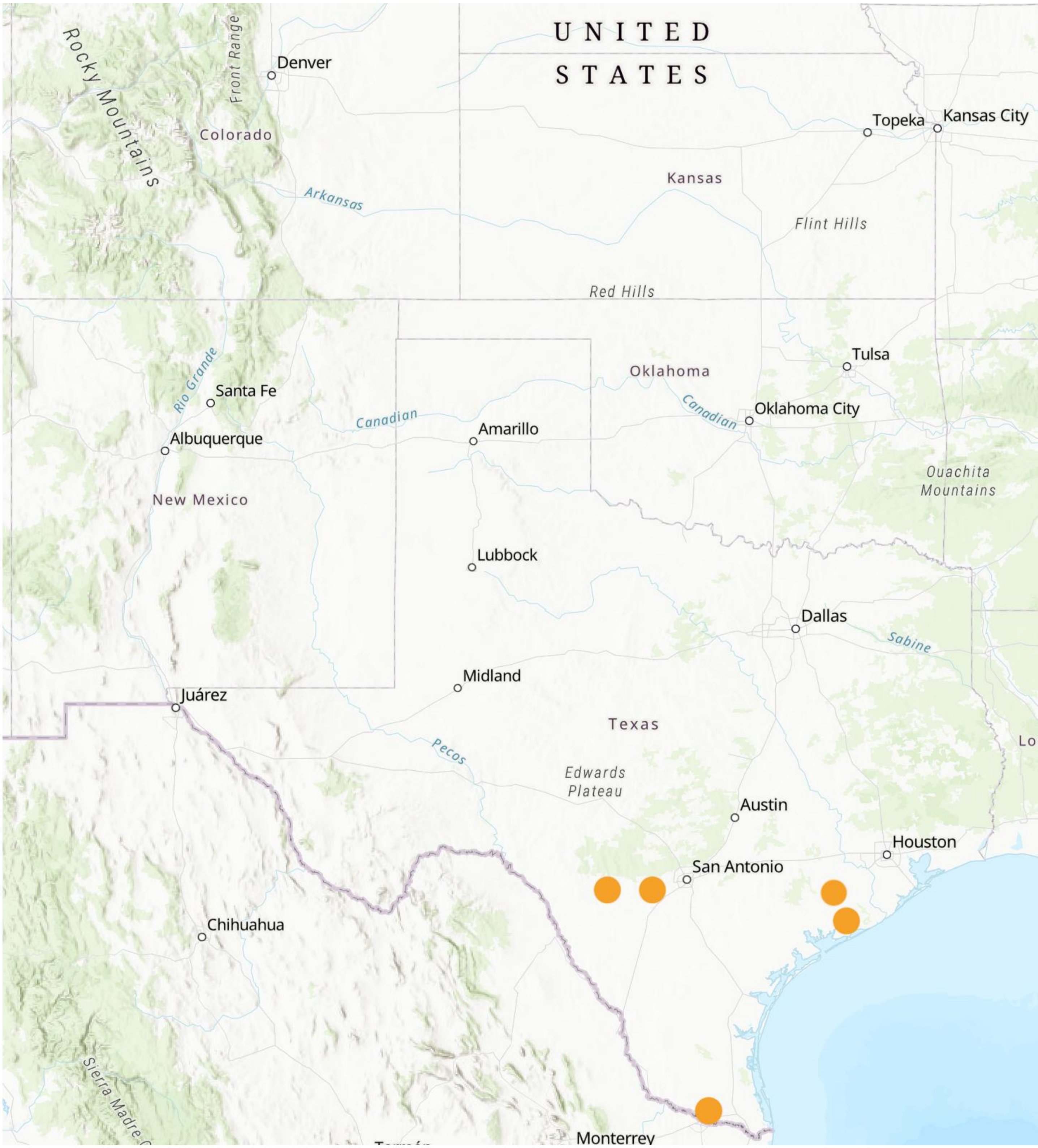


Figure 4. Texas oat crown rust observations/collections in wheat, USDA-ARS, Cereal Disease Laboratory, Cereal Rust Observation Maps as of May 30, 2025 (site checked on June 26, 2025 with no changes), https://usdaars.maps.arcgis.com/apps/mapviewer/index.html?webmap=a5bae196706b48fa83a8d5e1b344f802 (note the map is updated as new reports are received).

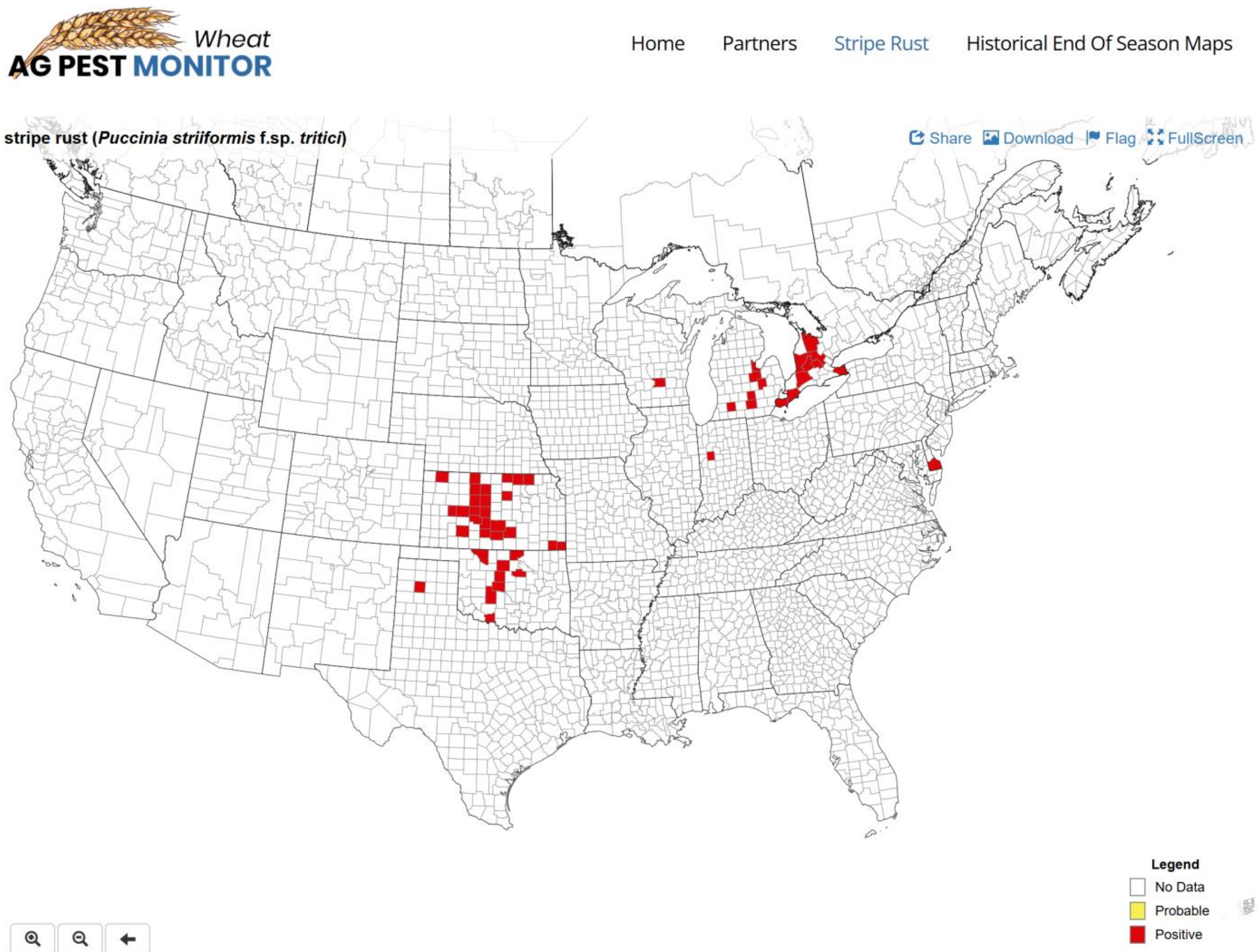
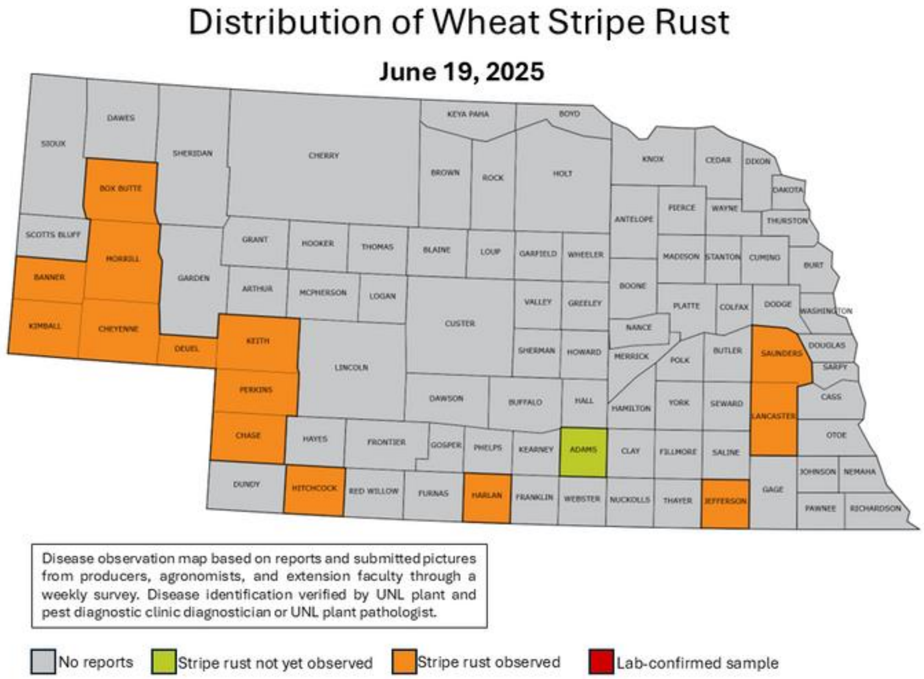


Figure 5. USA stripe rust observations, as of June 26, 2025, courtesy of AG PEST MONITOR: Wheat, https://wheat.agpestmonitor.org/stripe-rust/.



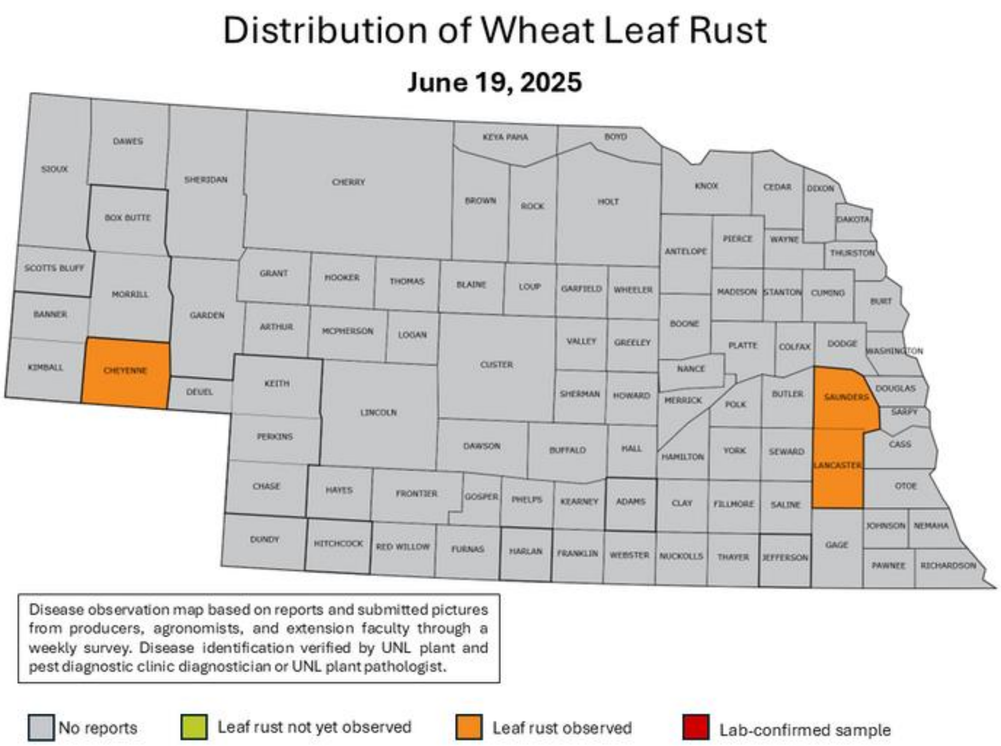


Figure 6. Distribution of stripe (top) and leaf (bottom) rust in Nebraska, USA, as of June 19, 2025 (https://cropwatch.unl.edu/late-season-rust-observed-eastern-nebraska-wheat-limited-yield-impact-expected/).

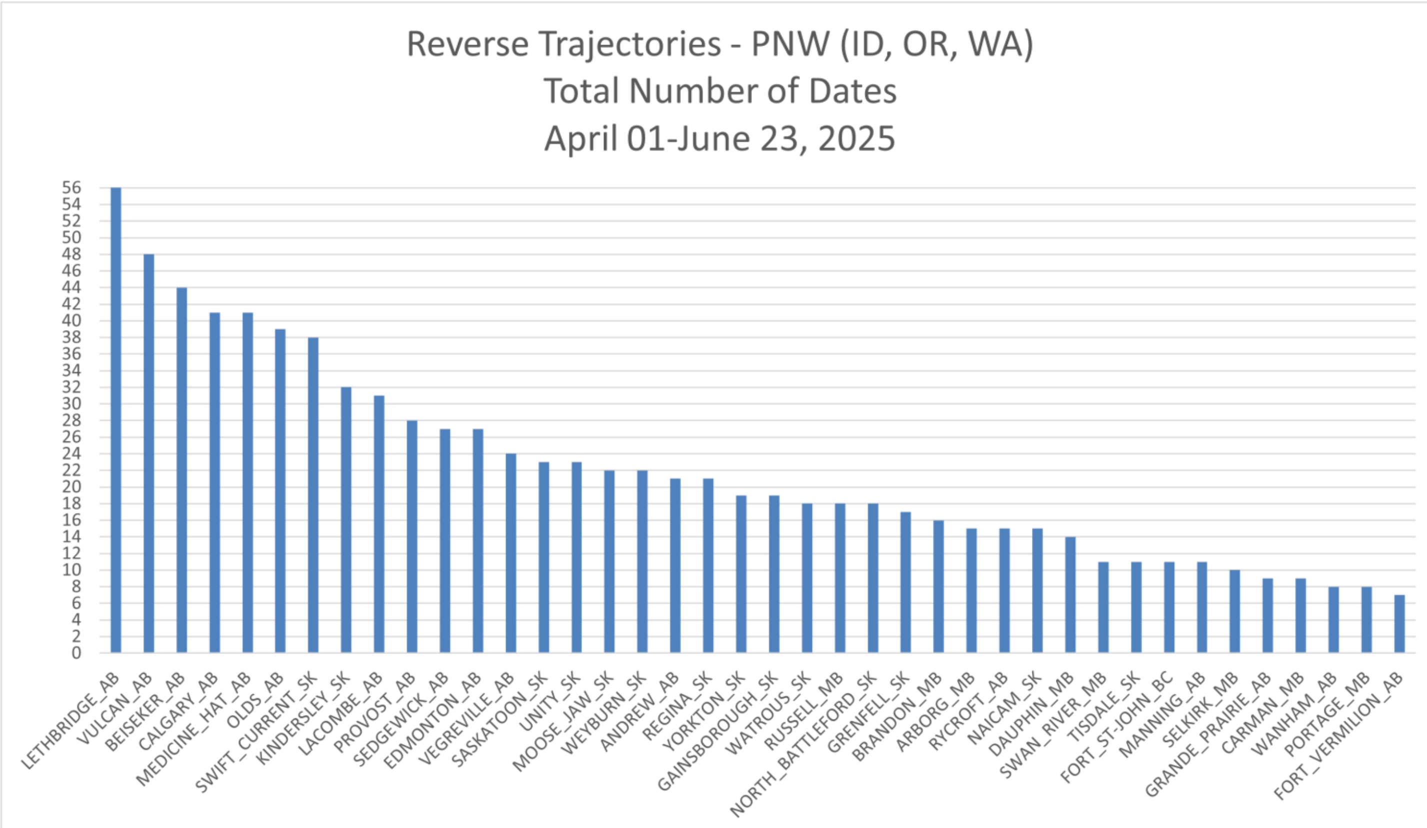


Figure 7. Reverse trajectory locations and number of events, for reverse trajectory events originating from the Pacific Northwest region of the USA, April 1 – June 23, 2025.

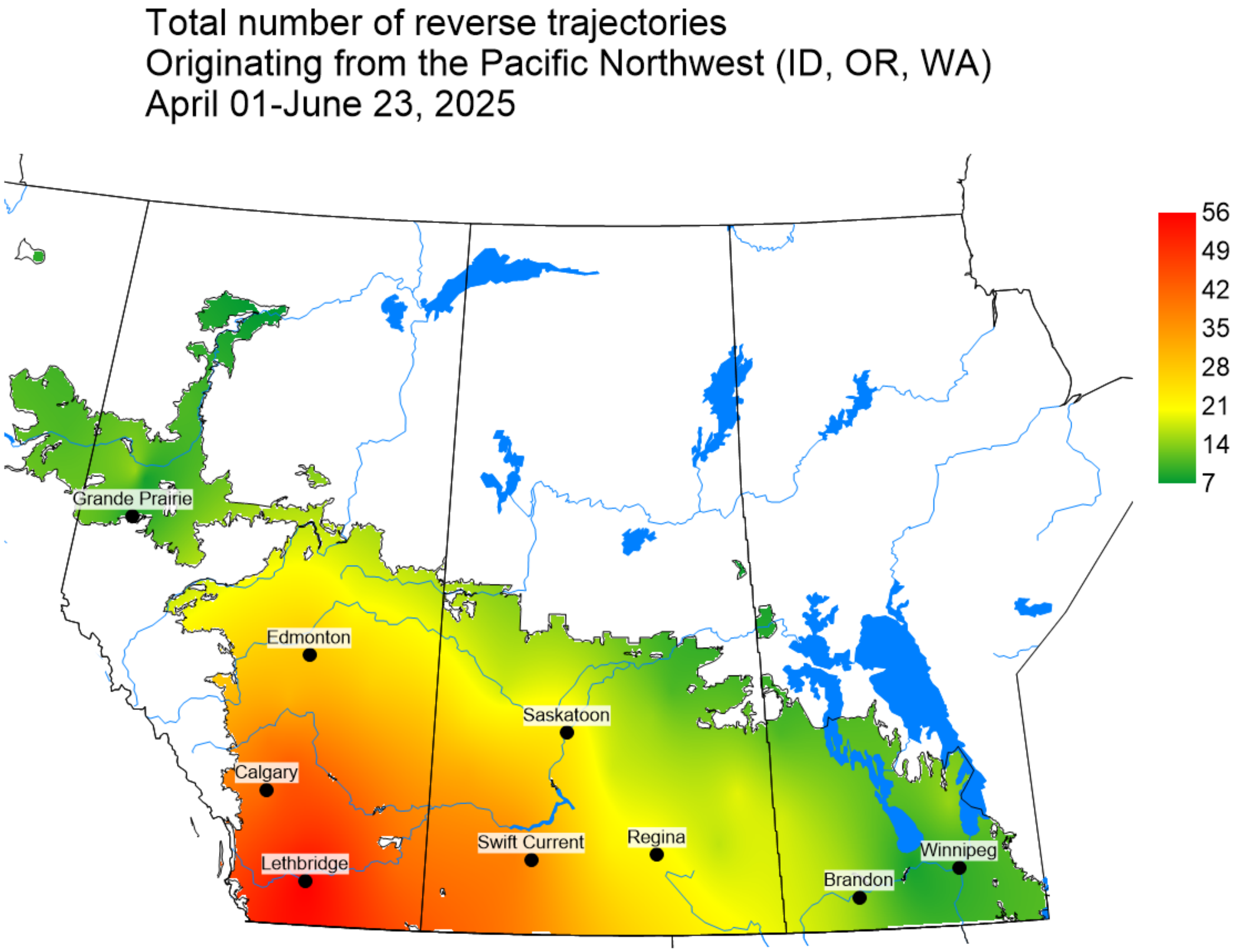


Figure 8. Total number of dates with reverse trajectories originating from the Pacific Northwest region of the USA that have crossed the prairies between April 1 – June 23, 2025.

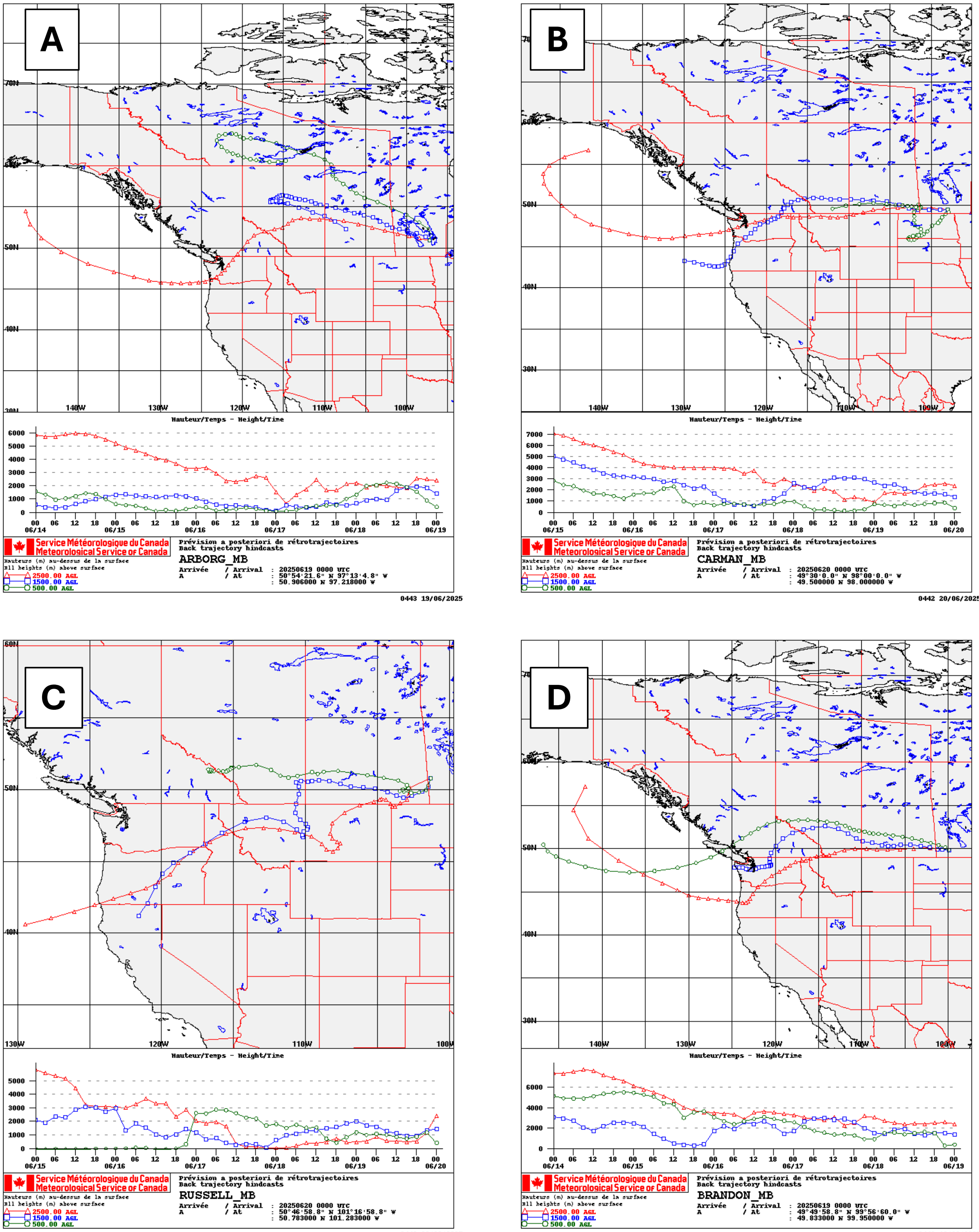


Figure 9a-d. Wind trajectory maps from Environment Canada for Arborg, MB, June 19, 2025 (A), Carman, MB, June 20, 2025 (B), Russell, MB, June 20, 2025 (C), and Brandon, MB, June 19, 2025 (D).

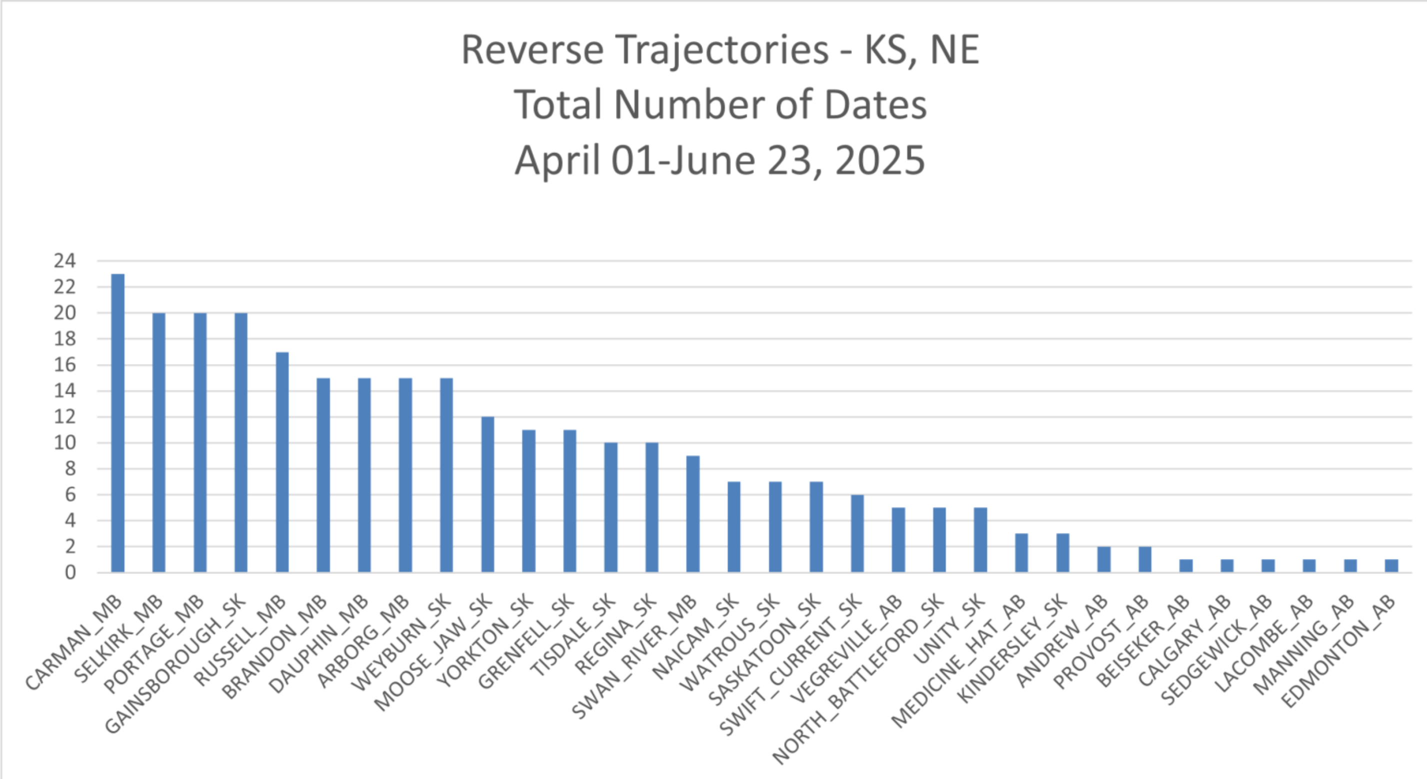


Figure 10. Reverse trajectory locations and number of events, for reverse trajectory events originating from Kansas and Nebraska, USA, April 1 – June 23, 2025.

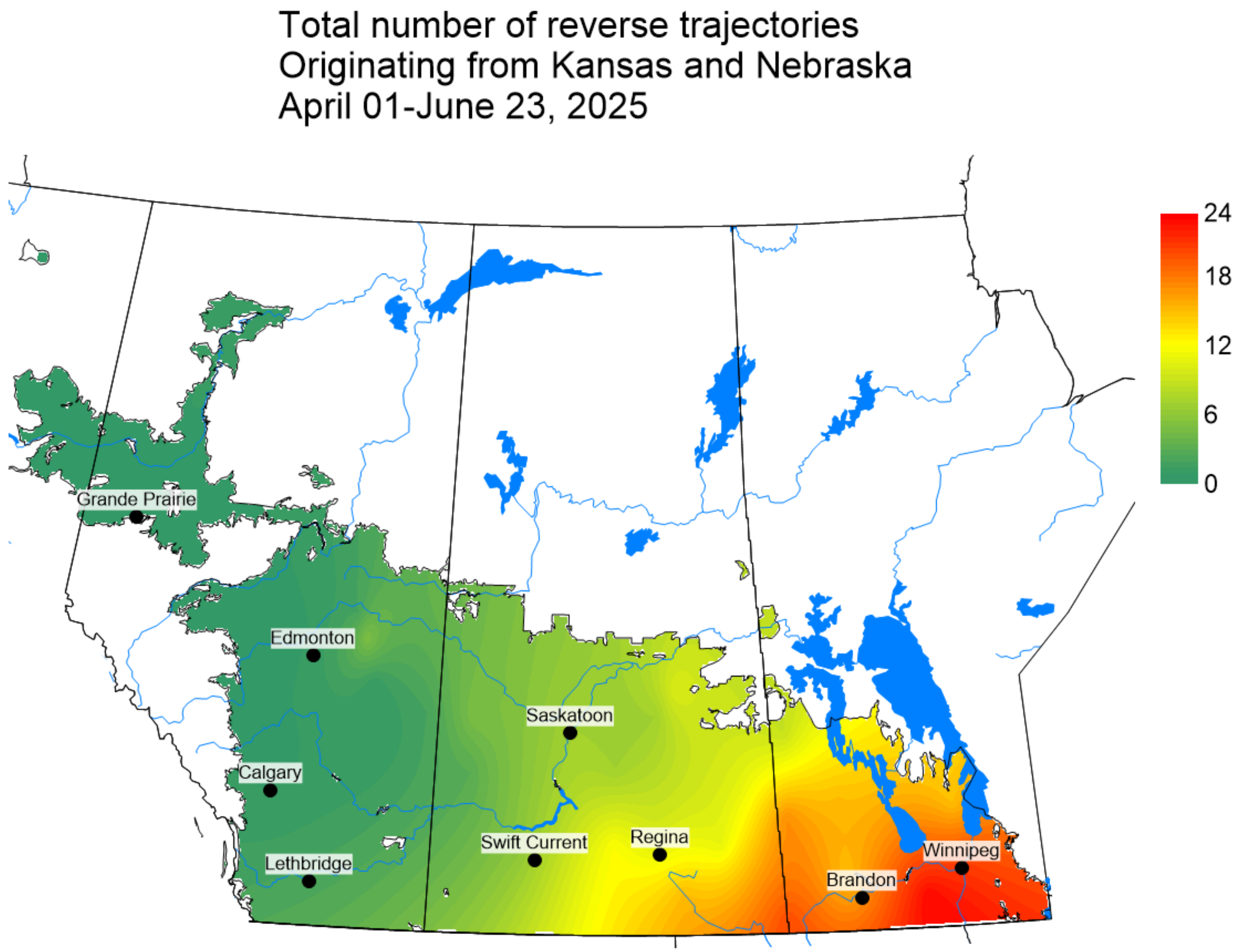


Figure 11. Total number of dates with reverse trajectories originating from Kansas and Nebraska, USA that have crossed the prairies between April 1 – June 23, 2025.

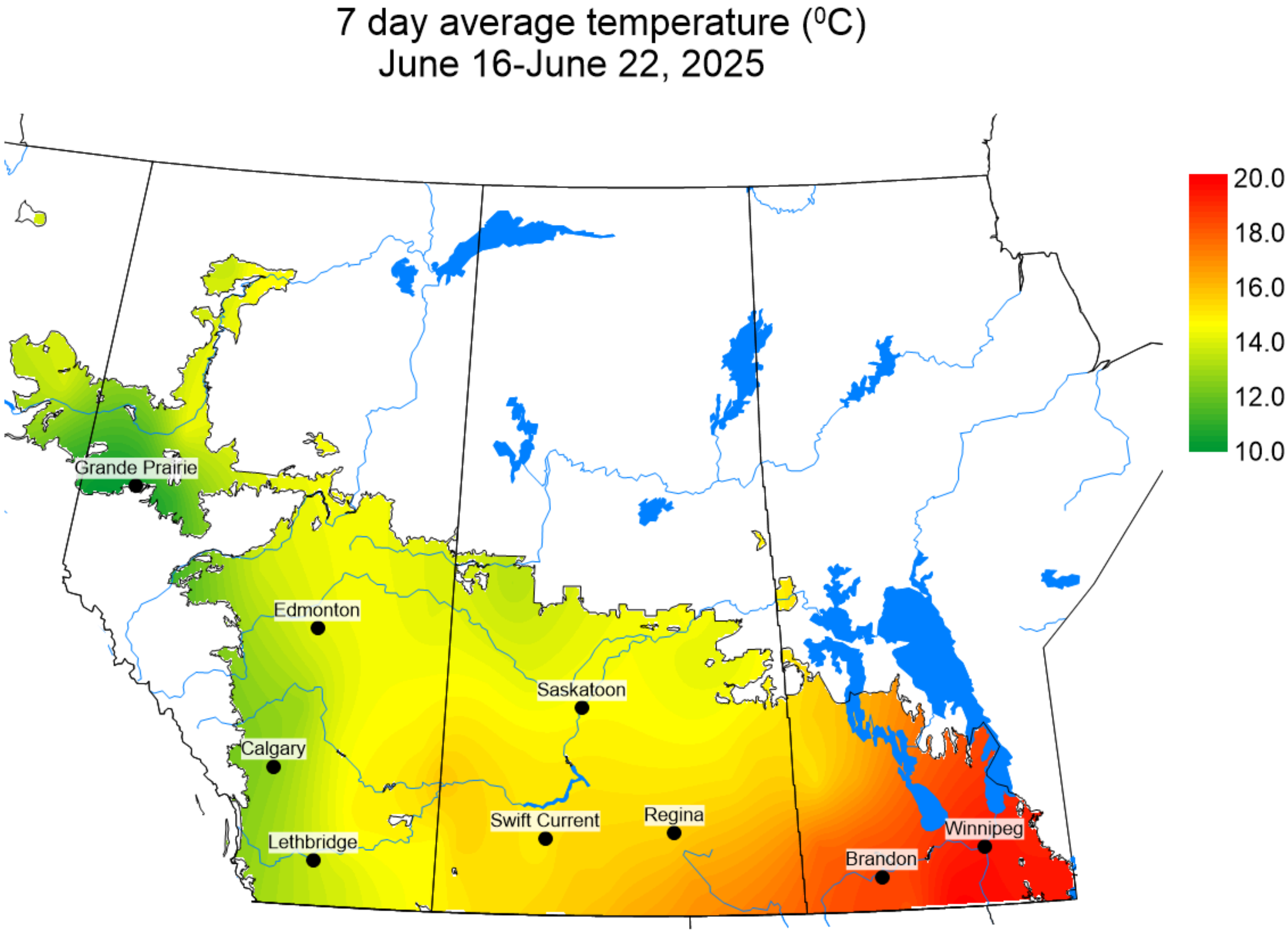


Figure 12. Seven day average temperature (°C), Prairie region, June 16-22, 2025.

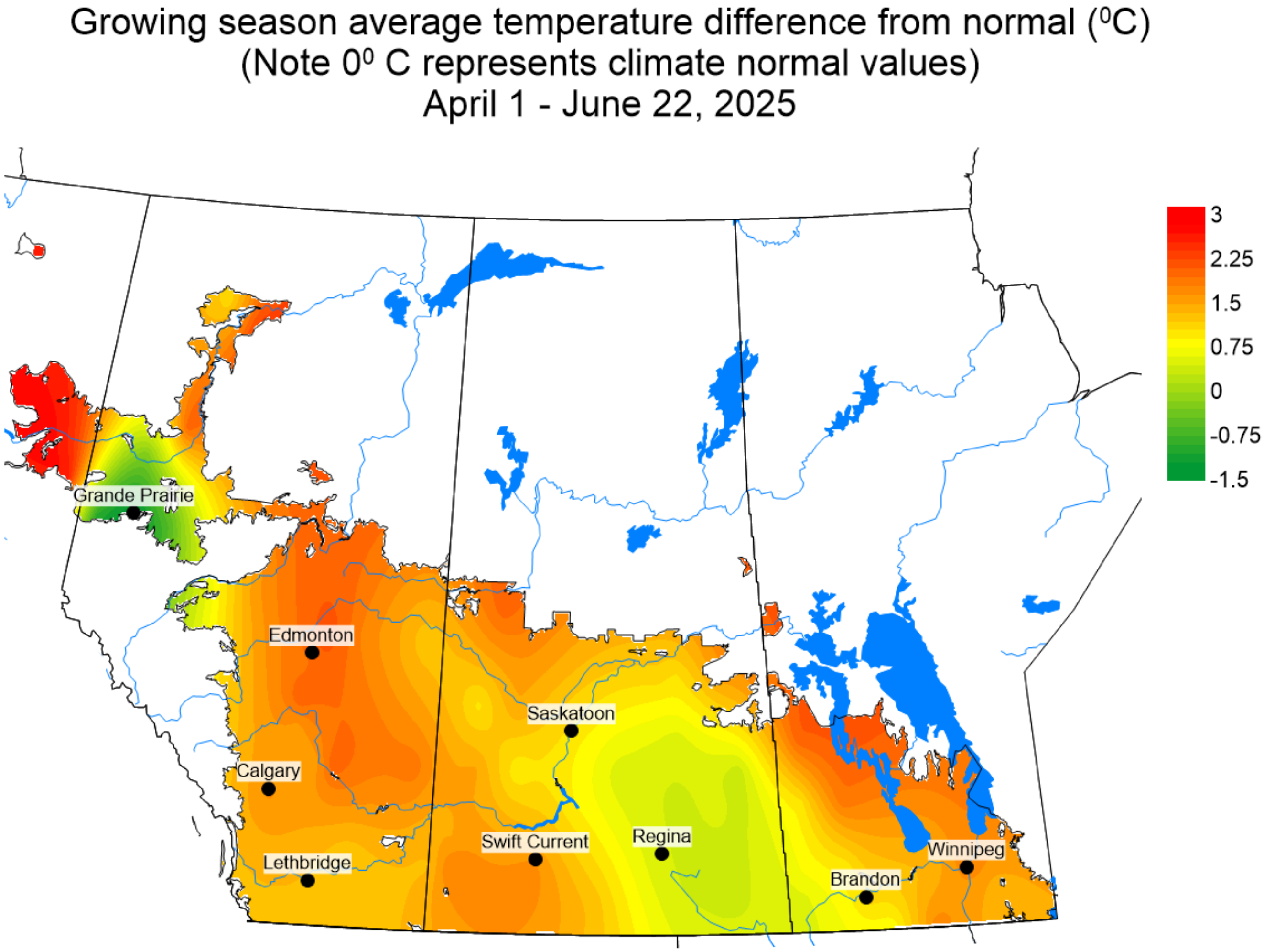


Figure 13. Growing season average temperature (°C) difference from normal, Prairie region, April 1 – June 22, 2025.

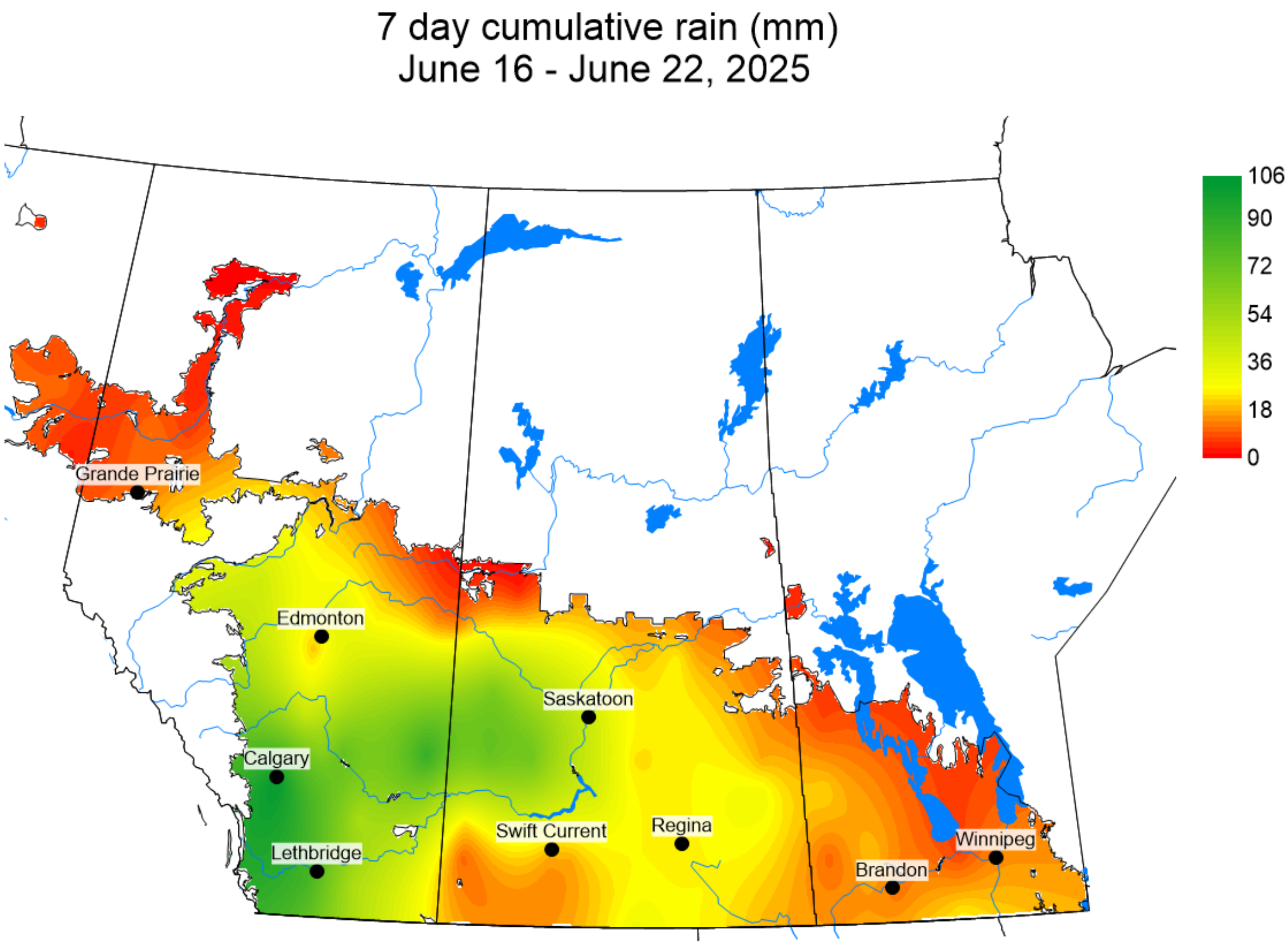


Figure 14. Seven day accumulated rainfall (mm), Prairie region June 16-22, 2025.

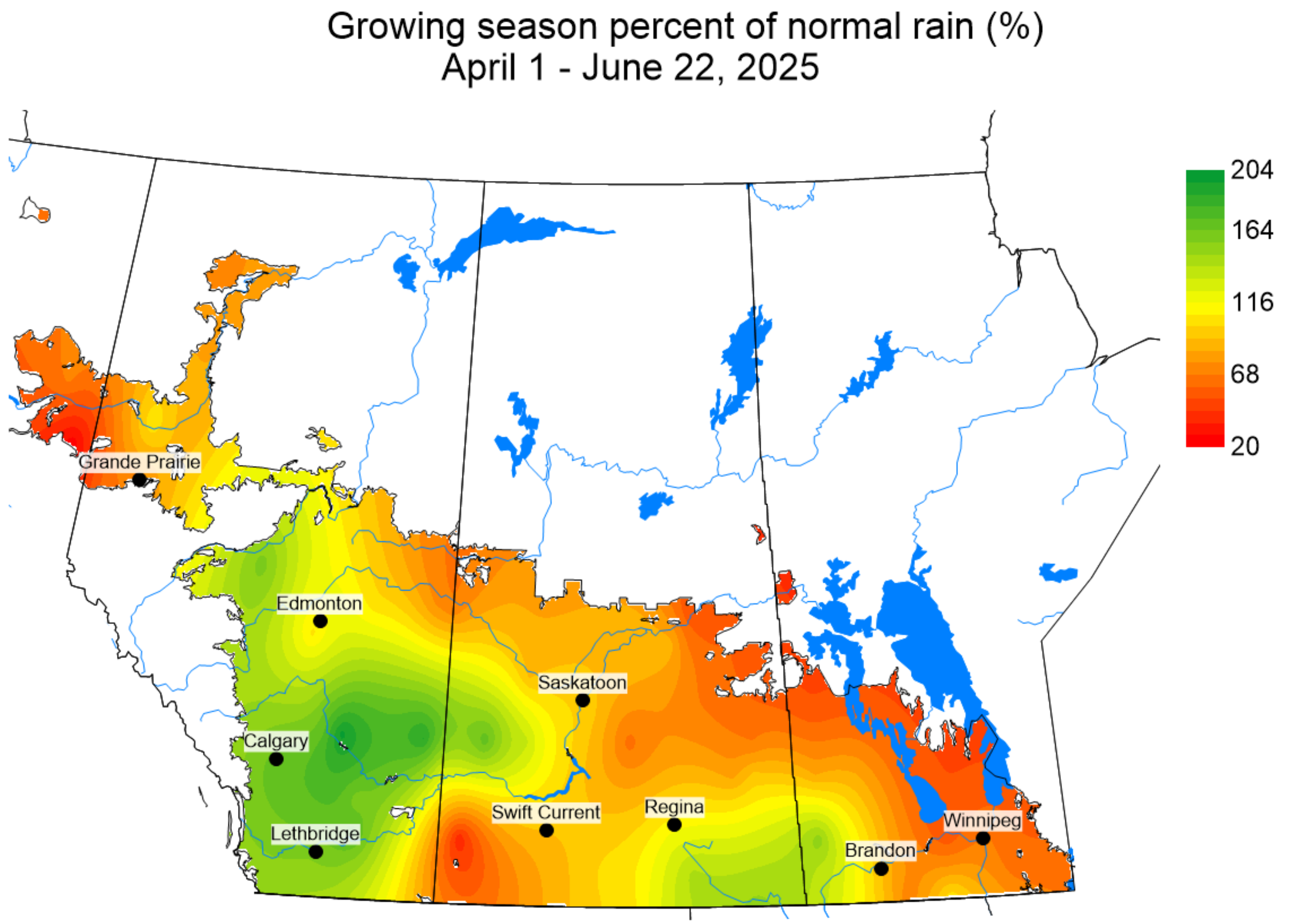


Figure 15. Growing season accumulated rainfall (mm) percent of normal, Prairie region April 1 – June 22, 2025.

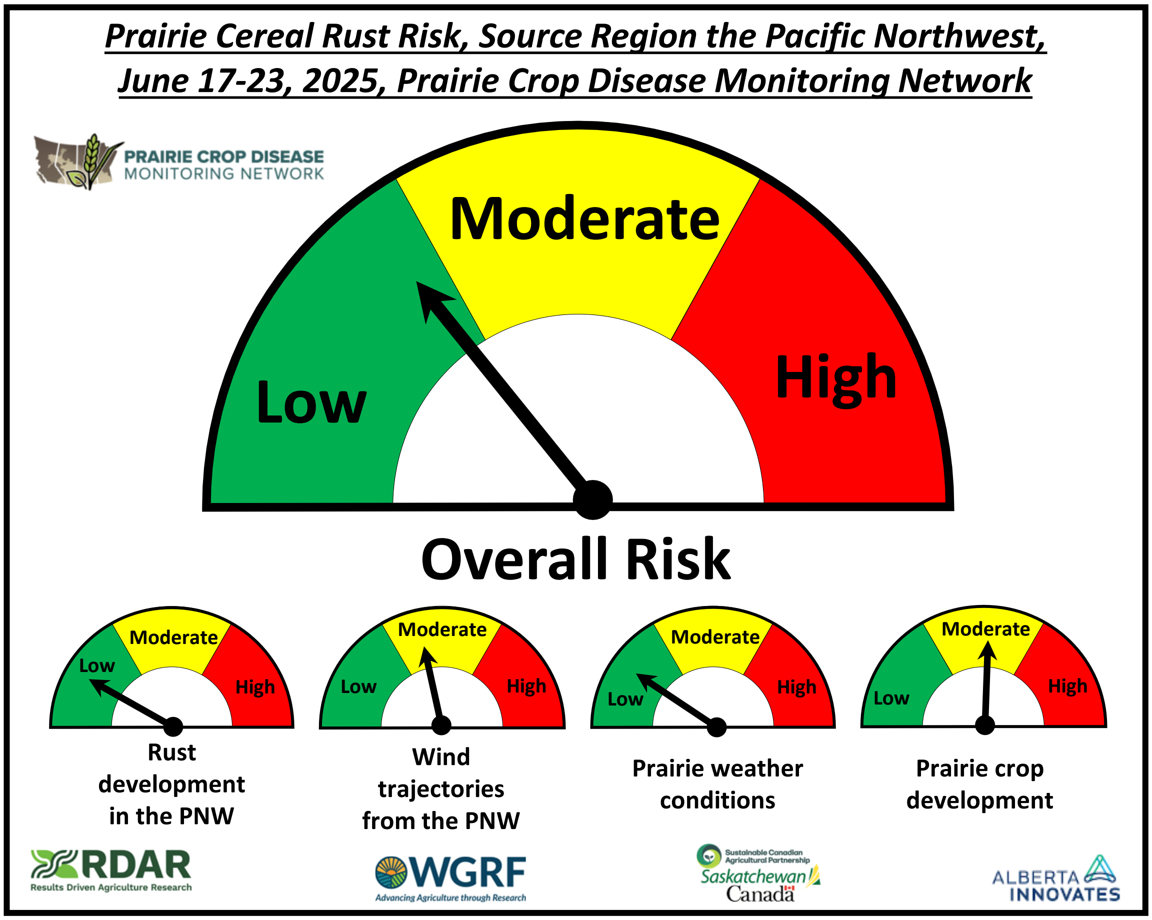


Figure 16. Prairie cereal risk speedometers for stripe rust from the Pacific Northwest, June 17-23, 2025.

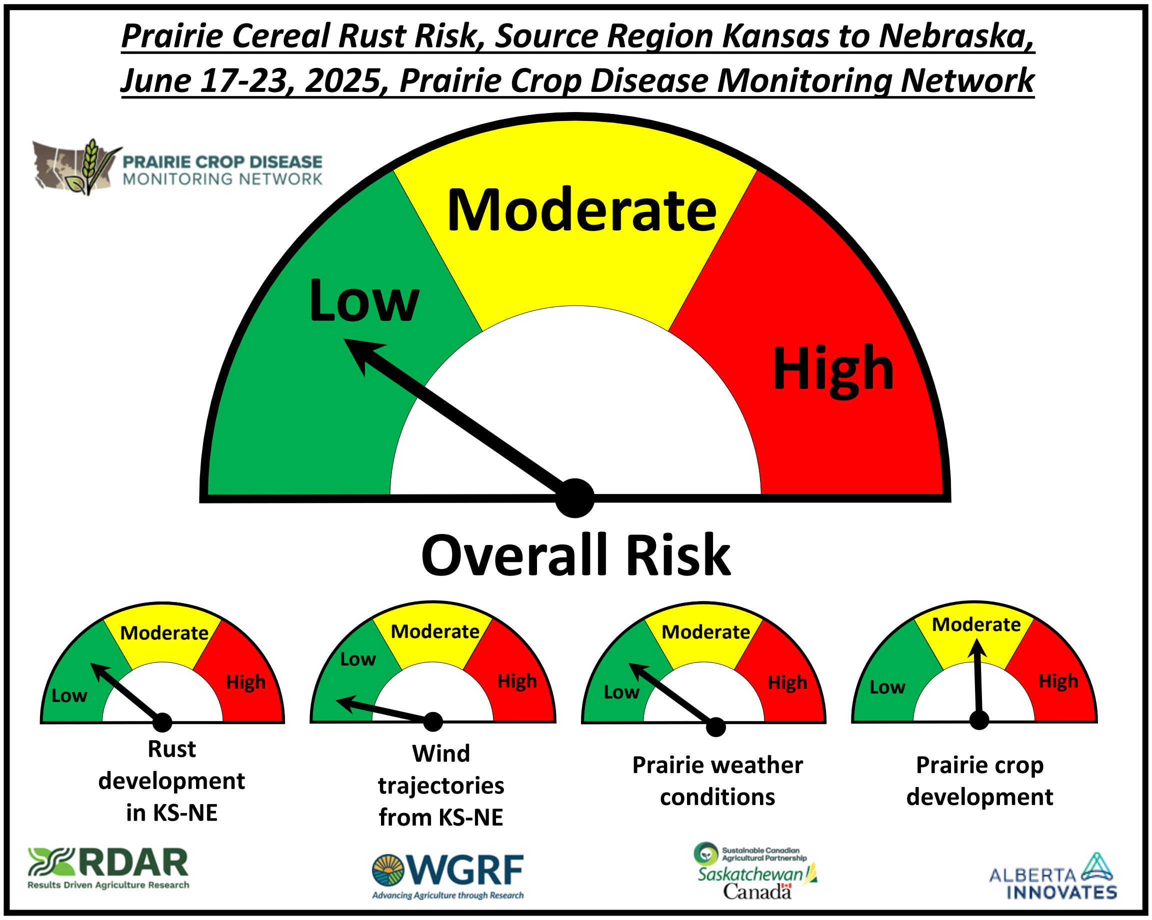


Figure. 17. Prairie cereal risk speedometers for stripe/leaf rust from the Kansas/Nebraska region, June 17-23, 2025.

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 17- 23, 2025.

Location	Province	17-Jun-25	18-Jun-25	19-Jun-25	20-Jun-25	21-Jun-25	22-Jun-25	23-Jun-25	Total trajectories/ location
SWIFT CURRENT	SK	1	1	1	1	1	1	0	**6**
ARBORG	MB	1	0	1	1	1	1	0	**5**
BEISEKER	AB	1	1	1	1	1	0	0	**5**
CALGARY	AB	1	1	1	1	1	0	0	**5**
GAINSBOROUGH	SK	1	0	1	1	1	0	1	**5**
LETHBRIDGE	AB	1	1	1	1	1	0	0	**5**
MEDICINE HAT	AB	1	1	1	1	1	0	0	**5**
OLDS	AB	1	1	1	1	1	0	0	**5**
PROVOST	AB	1	1	1	1	1	0	0	**5**
VULCAN	AB	1	1	1	1	1	0	0	**5**
WEYBURN	SK	0	1	1	1	1	0	1	**5**
CARMAN	MB	1	0	0	1	1	1	0	**4**
NAICAM	SK	0	0	0	1	1	1	1	**4**
RUSSELL	MB	1	0	0	1	1	0	1	**4**
YORKTON	SK	1	0	1	1	1	0	0	**4**
BRANDON	MB	1	0	1	0	0	1	0	**3**
GRENFELL	SK	1	1	1	0	0	0	0	**3**
KINDERSLEY	SK	1	1	1	0	0	0	0	**3**
LACOMBE	AB	1	1	1	0	0	0	0	**3**
PORTAGE	MB	0	0	1	1	1	0	0	**3**
REGINA	SK	0	0	0	1	1	0	1	**3**
SELKIRK	MB	0	1	0	1	1	0	0	**3**
UNITY	SK	0	1	0	1	1	0	0	**3**
WATROUS	SK	1	0	0	0	0	1	1	**3**
DAUPHIN	MB	0	0	0	1	1	0	0	**2**
SASKATOON	SK	0	1	0	0	0	1	0	**2**
SEDGEWICK	AB	1	1	0	0	0	0	0	**2**
TISDALE	SK	0	0	0	0	0	1	1	**2**
ANDREW	AB	1	0	0	0	0	0	0	**1**
EDMONTON	AB	0	1	0	0	0	0	0	**1**
FORT ST-JOHN	BC	1	0	0	0	0	0	0	**1**
GRANDE PRAIRIE	AB	1	0	0	0	0	0	0	**1**
NORTH BATTLEFORD	SK	1	0	0	0	0	0	0	**1**
SWAN RIVER	MB	0	0	0	0	0	1	0	**1**
VEGREVILLE	AB	0	1	0	0	0	0	0	**1**
Total trajectories per date		**23**	**18**	**17**	**20**	**20**	**9**	**7**	**114**

Table 2. Reverse trajectory locations, arrival dates, and number of events, for reverse trajectory events originating from Kansas and Nebraska, USA, June 17-23, 2025.

Location	Province	17-Jun-25	18-Jun-25	19-Jun-25	20-Jun-25	21-Jun-25	22-Jun-25	23-Jun-25	Total trajectories/ location
SELKIRK	MB	0	0	0	1	1	1	1	**4**
CARMAN	MB	0	0	0	1	1	0	1	**3**
BRANDON	MB	0	0	0	0	0	1	1	**2**
DAUPHIN	MB	1	0	0	0	0	0	1	**2**
GAINSBOROUGH	SK	0	0	0	0	0	1	1	**2**
PORTAGE	MB	0	0	0	0	0	1	1	**2**
ARBORG	MB	0	0	0	0	0	0	1	**1**
RUSSELL	MB	1	0	0	0	0	0	0	**1**
YORKTON	SK	0	0	0	0	0	1	0	**1**
Total trajectories per date		**2**	**0**	**0**	**2**	**2**	**5**	**7**	**18**

Table 3. Reverse trajectory locations, arrival dates, and number of events, for reverse trajectory events originating from Montana, USA, June 17- 23, 2025.									
Location	**Province**	**17-Jun-25**	**18-Jun-25**	**19-Jun-25**	**20-Jun-25**	**21-Jun-25**	**22-Jun-25**	**23-Jun-25**	**Total trajectories / location**
WEYBURN	SK	1	0	1	1	1	1	1	6
BRANDON	MB	1	0	1	1	1	1	0	5
DAUPHIN	MB	1	0	0	1	1	1	1	5
GAINSBOROUGH	SK	1	0	1	1	1	0	1	5
GRENFELL	SK	1	0	1	1	1	0	1	5
LETHBRIDGE	AB	1	1	1	1	1	0	0	5
YORKTON	SK	1	0	0	1	1	1	1	5
ARBORG	MB	1	0	0	1	1	1	0	4
CARMAN	MB	1	0	0	1	1	1	0	4
MEDICINE HAT	AB	0	1	0	1	1	1	0	4
MOOSE JAW	SK	0	0	0	1	1	1	1	4
REGINA	SK	0	0	1	1	1	0	1	4
RUSSELL	MB	1	0	0	1	1	0	1	4
SWAN RIVER	MB	0	0	0	1	1	1	1	4
SWIFT CURRENT	SK	0	1	0	1	1	1	0	4
PORTAGE	MB	0	0	0	1	1	1	0	3
SELKIRK	MB	1	0	0	1	1	0	0	3
CALGARY	AB	0	0	0	1	1	0	0	2
KINDERSLEY	SK	0	1	0	0	0	1	0	2
OLDS	AB	0	0	0	1	1	0	0	2
PROVOST	AB	0	0	0	1	1	0	0	2
TISDALE	SK	0	0	0	0	0	1	1	2
WATROUS	SK	0	0	0	0	0	1	1	2
BEISEKER	AB	0	0	1	0	0	0	0	1
NAICAM	SK	0	0	0	0	0	0	1	1
NORTH BATTLEFORD	SK	0	0	0	0	0	1	0	1
VULCAN	AB	0	0	1	0	0	0	0	1
Total trajectories per date		**11**	**4**	**8**	**20**	**20**	**15**	**12**	**90**