

Manitoba Grasshopper Forecast for 2025



Two-striped (left) and migratory (right) grasshoppers

Grasshopper surveys have been conducted in Manitoba in various degrees of detail since 1931. The current grasshopper forecast is based on counts of grasshopper populations in August (which estimates the egg-laying population), weather data (which helps estimate whether those female grasshoppers present are capable of laying their optimum level of eggs), and recent trends in grasshopper populations. In some years, natural enemy populations may significantly affect the number of grasshoppers, or the number of their eggs that survive and hatch, and such data may be pertinent to the forecast as well. Counts are generally done in or alongside crop fields in Manitoba. The goal is to estimate levels of the four species of grasshoppers that have potential to be pests of crops in Manitoba.

Purpose of a grasshopper forecast

All stages of grasshoppers, except the egg stage, feed on plants. Some species will feed on crops, while other species do not, or rarely will. Older grasshoppers of these crop feeding species can do the most damage to crops, particularly later in the season as these grasshoppers can move greater distances. In annual cropping systems, the young stages of these species are often highly concentrated around field edges early in the season, particularly around fields that had sparse green vegetation late in the previous summer. If grasshopper populations get quite high, these younger, concentrated populations of grasshoppers are much easier to control than older and more dispersed populations later in the season.

Knowing the risk of grasshoppers being a problem alerts farmers and agronomists to the importance of monitoring field edges, vegetation surrounding the fields, and other preferred egg laying areas in late-May and June for these younger grasshoppers. This information can also help farmers choose crops and plan seeding practices for the following year.

Interpreting the grasshopper survey map

The grasshopper survey map for Manitoba is based on counts of adult grasshoppers per m² done by crop production extension specialists, agronomists, and entomologists in August 2024. Grasshopper counts from 107 locations in Manitoba were used to produce the map. The legend on the map shows the average grasshopper counts in an area, and relates these to potential risk for many of our crops. Factors affecting grasshopper development, survival and behaviour will determine whether these August populations are likely to increase, decrease, or remain fairly stable for the next year and are also important factors in the overall forecast for 2025. The small circles on the map show where data was collected, and the risk category the count is in. White areas on the map are areas where data was not collected. Note that the averaging of counts in a region will result in a density category for a region representing the cumulative data, not the value from a specific count.

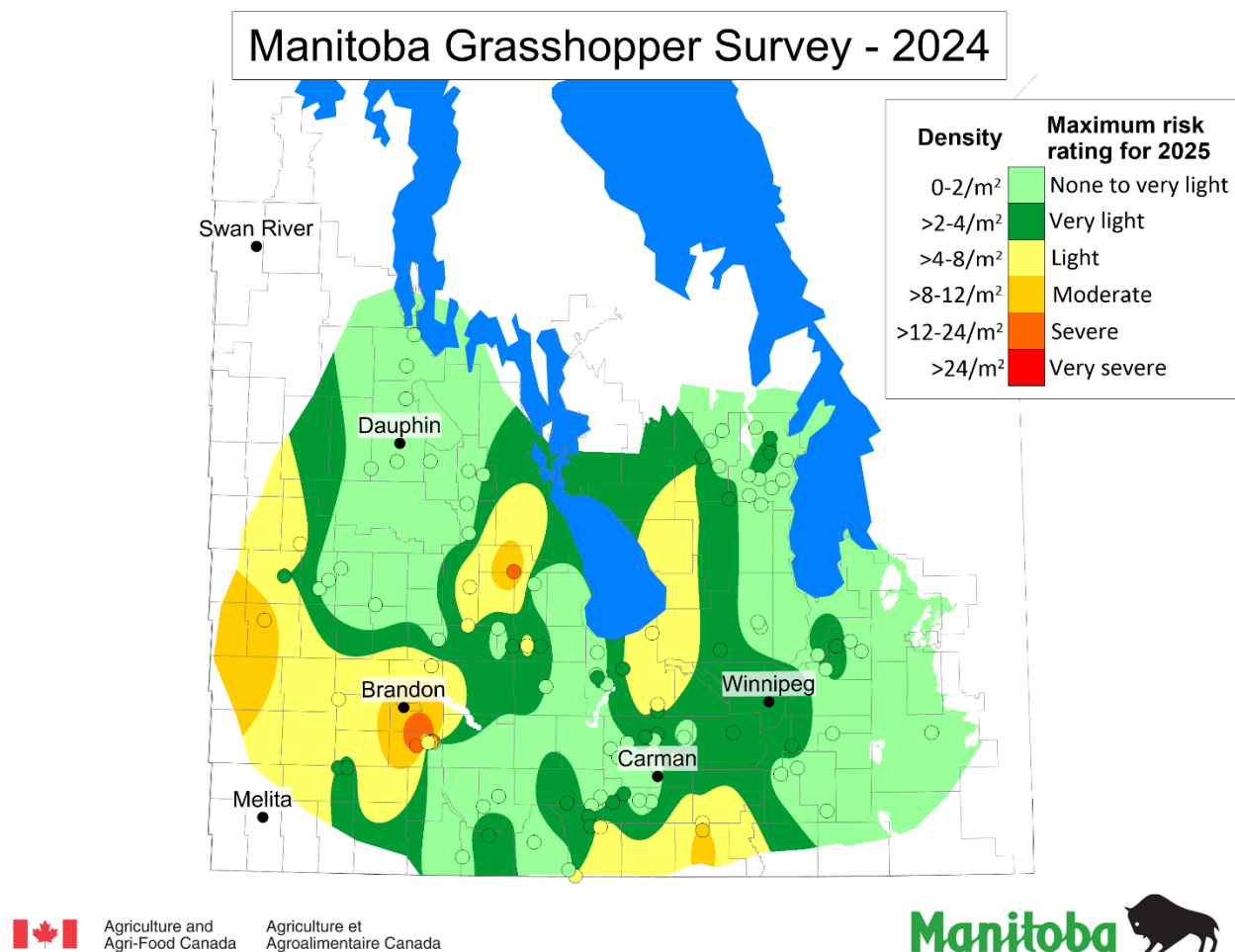


Figure 1. Average density of grasshoppers in Manitoba during August 2024.

The Grasshopper Forecast for Manitoba for 2025

What the grasshopper survey map shows

About 81% of the counts were in the none to very light or very light risk categories (87 out of 107 counts). Fourteen counts were in the light risk category (>4-8/m²), 3 counts were in the moderate risk category (>8-12/m²), and three counts were in

the severe risk category (>12-24/m²), two in the Southwest region and one in Central Manitoba. There were no counts in the very severe risk category. The Southwest was the region with the highest proportion of counts in the moderate risk category or above, with some counts in the moderate risk category or above also occurring in the Central region.

Table 1. Grasshopper counts in each risk category for each agricultural regions surveyed.

Region	Counts	Counts in Risk Category					
		Very Severe	Severe	Moderate	Light	Very Light	None to very light
Northwest	11	0	0	0	0	0	11
Southwest	20	0	2	2	6	3	7
Central	47	0	1	1	8	16	21
Eastern	9	0	0	0	0	1	8
Interlake	20	0	0	0	0	6	14
Total	107	0	3	3	14	26	61

Dominant species: While doing grasshopper counts, dominant species of grasshopper was recorded from 88 locations, with two or more different species listed as dominant at several locations. In 62 of these locations, twostriped grasshopper (*Melanoplus bivittatus*) was the most abundant, or one of the most abundant, species. Migratory grasshopper (*Melanoplus sanguinipes*) was a dominant species in 18 locations. Clearwinged grasshopper (*Camnula pellucida*) and Packard grasshopper (*Melanoplus packardii*) were the dominant species at 1 location each. Among non-pest species of grasshoppers, katydids were among the dominant species at 12 locations, and marsh meadow grasshopper (*Chortippus curtippennis*) were recorded as or among the dominant species at 7 locations.

Twostriped and migratory grasshoppers feed on a variety of types of plants (both crops and non-crop). Clearwinged grasshopper is primarily a grass feeder, and seldom feeds on broad-leaved plants.

Recent trends in grasshopper populations

Grasshopper outbreaks usually develop after a few years of conditions that are favourable for a steady increase in numbers of those species of grasshopper that can become pests of crops. Comparing the current August grasshopper counts with those of previous years can determine if the populations tend to be rising or falling.

Comparing the counts from the 2021, 2022, 2023 and 2024 surveys, in 2021 the percentage of counts in the survey that were in the moderate to very severe categories was 10.3%, while the percentage of counts in these categories rose to 16% in the 2022 survey, then dropped to 9.2% in the 2023 survey. In the counts for the grasshopper survey in August 2024, the percent that were in the moderate to very severe categories fell to 5.6%. There continues to be areas where counts in some of the higher categories are occurring, but overall the number of higher counts was reduced in the survey in 2024, and the majority of counts were in the lighter risk categories.

Weather in late-summer

The weather in late-summer can affect how many grasshopper eggs are laid.

Temperature: Temperatures in August were near the 30-year average for all regions, or slightly above. As a result, growing degree-days (GDD) accumulations for August were also near normal or slightly above.

With some exceptionally hot days, average temperatures for September were well above normal. On average, temperatures were approximately 5°C above the 30-year average. With that, GDD accumulations were also well above normal, with all regions being above 165% of normal.

The first wide-spread frost event was on October 3.

Precipitation: Precipitation in August was below normal for all regions, except for the Northwest which was slightly above the 30-year average. In September, precipitation in the Interlake and Northwest were between 45 and 50% of normal. However, some heavy rains in the Central and Eastern regions brought above normal precipitation to those areas. Overland flooding was observed as a result in the East. A weather station in Elma recorded 206 mm between Sept 16th and 17th.

Summary

Grasshoppers were still a concern in some areas of Manitoba in 2024, although not to the same extent as the previous few years. There were reports of grasshopper control being needed in some fields, particularly in the Central region. Grasshopper levels were also lower in the survey in 2024 than in the past few years.

Conditions for egg laying in late-summer were generally good. Temperatures were normal in August and well above average in September, with the first wide-spread frost not occurring until into October. Conditions would have allowed the grasshoppers to be active and laying eggs into late-summer.

Our pest species of grasshoppers all overwinter in the egg stage. Some insects that have larvae that feed mainly on grasshopper eggs, such as *Epicauta* species of blister beetles, were quite noticeable in some locations of Manitoba in 2024.

The risk of economical populations of grasshoppers developing in 2025 varies, depending on location. The August survey showed generally light to moderate levels in many areas, but there continues to be areas where counts in some of the higher categories are occurring. If weather is favourable for grasshopper survival and development, there may be areas where grasshoppers are a concern to crops in 2025. Even in some of the areas that had lighter counts in the survey in August, control was needed in some fields during the growing season.

When they have the opportunity, farmers and agronomists are encouraged to monitor grasshopper populations, beginning in late-May or early-June in 2025, along roadsides, field edges, and other areas where populations tend to be concentrated or at high levels early in the season.

For more information on the grasshopper forecast or monitoring for grasshoppers, please contact John Gavloski at (204) 750-0594.

The protocol for doing the grasshopper counts for this survey can be found at: <https://www.gov.mb.ca/agriculture/crops/insects/pubs/grasshopper-survey-protocol-revised-2024-07.pdf>

A factsheet providing more information on grasshopper biology, species identification, monitoring and management is available at: <https://www.gov.mb.ca/agriculture/crops/insects/pubs/grasshoppers-factsheet-revised-november2022.pdf>

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January 2025