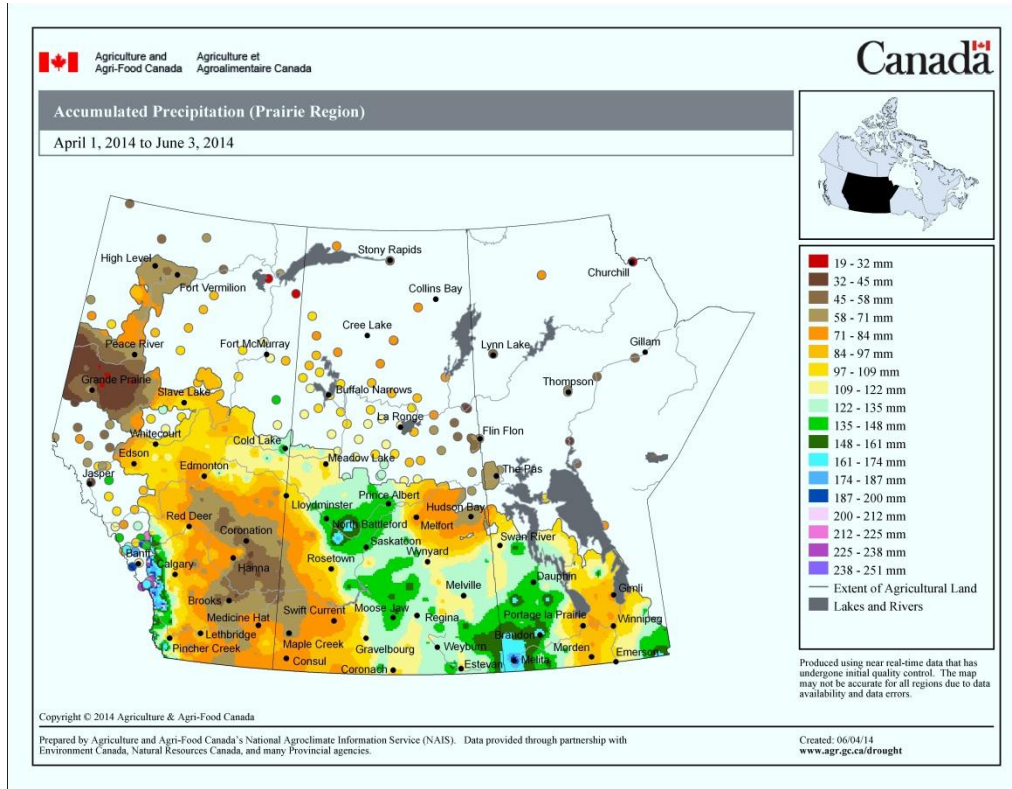
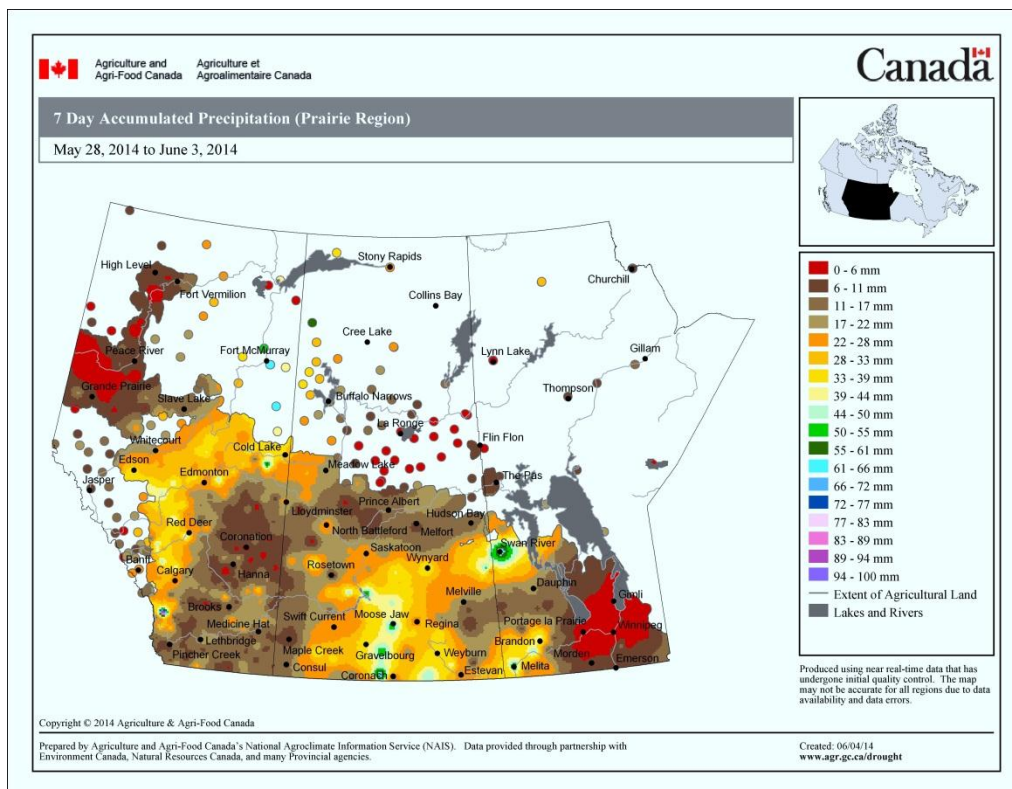


Prairie Pest Monitoring Network Weekly Updates – June 4, 2014 Otani, Giffen, Weiss, Olfert

1. **Weather synopsis** – Below is the **Accumulated Precipitation for the Growing Season** (i.e., April 1-June 3, 2014):

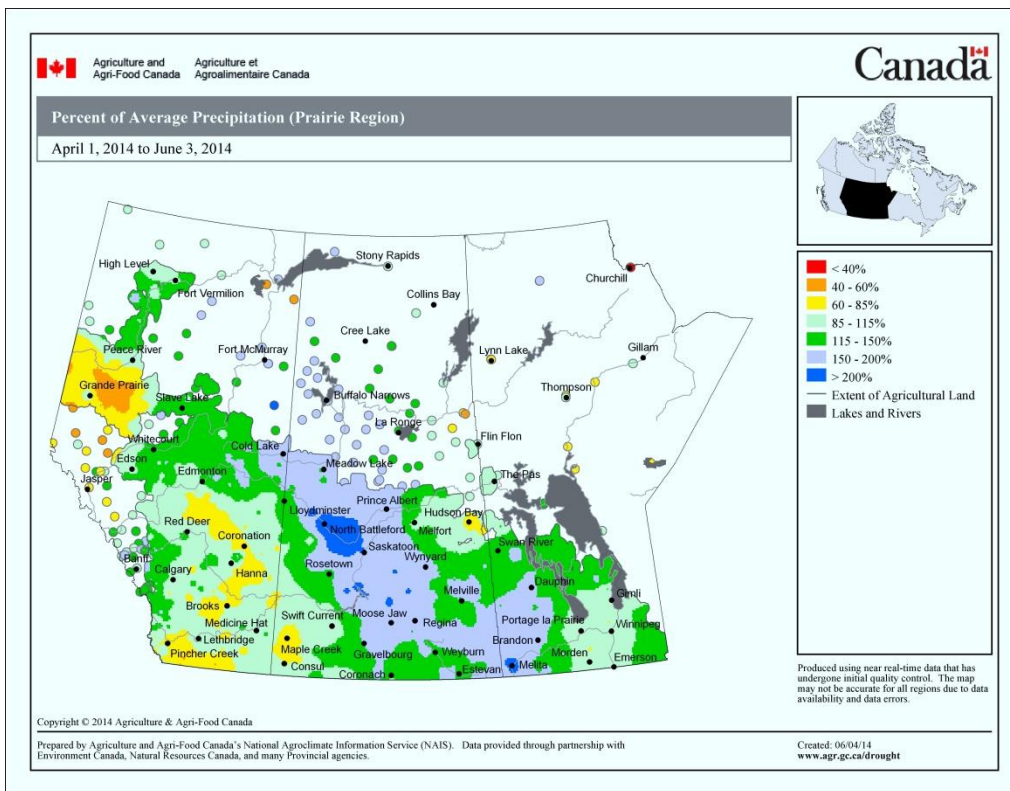


While below is the **Accumulated Precipitation the Past 7 Days** (i.e., May 28-June 3, 2014):

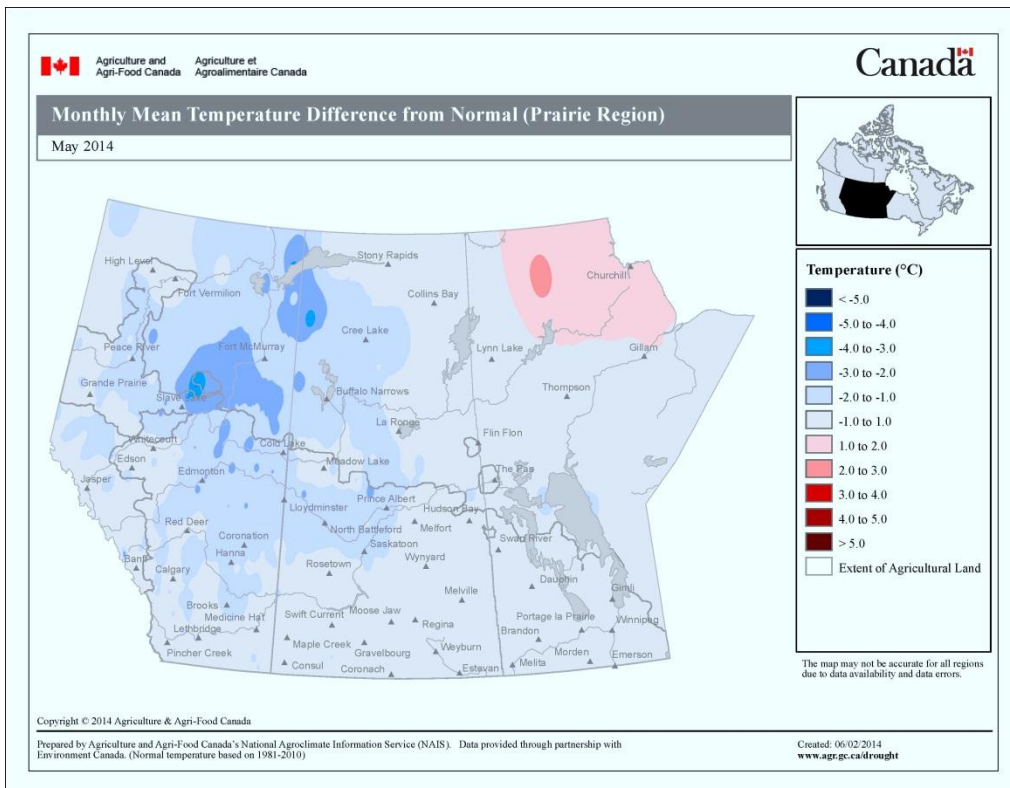




The map below shows the **Percent of Average Precipitation** for the growing season (April 1-June 3, 2014):

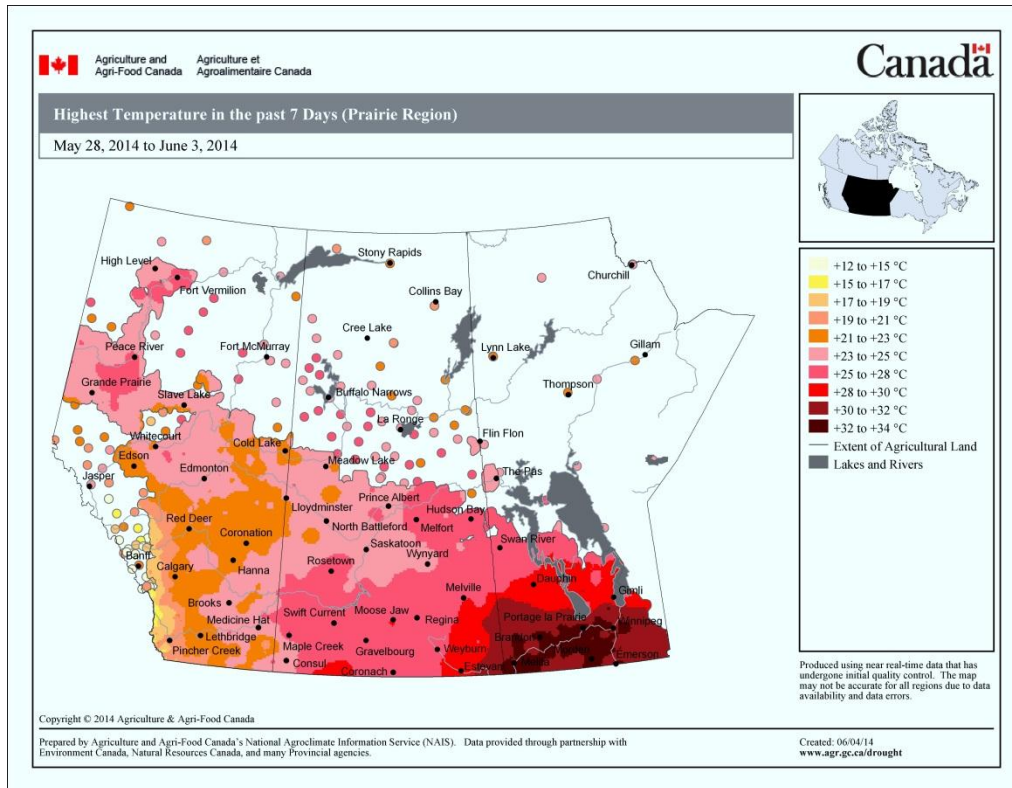


And below you will find the map showing the **Monthly Mean Temperature Difference from Normal** for the month of May:

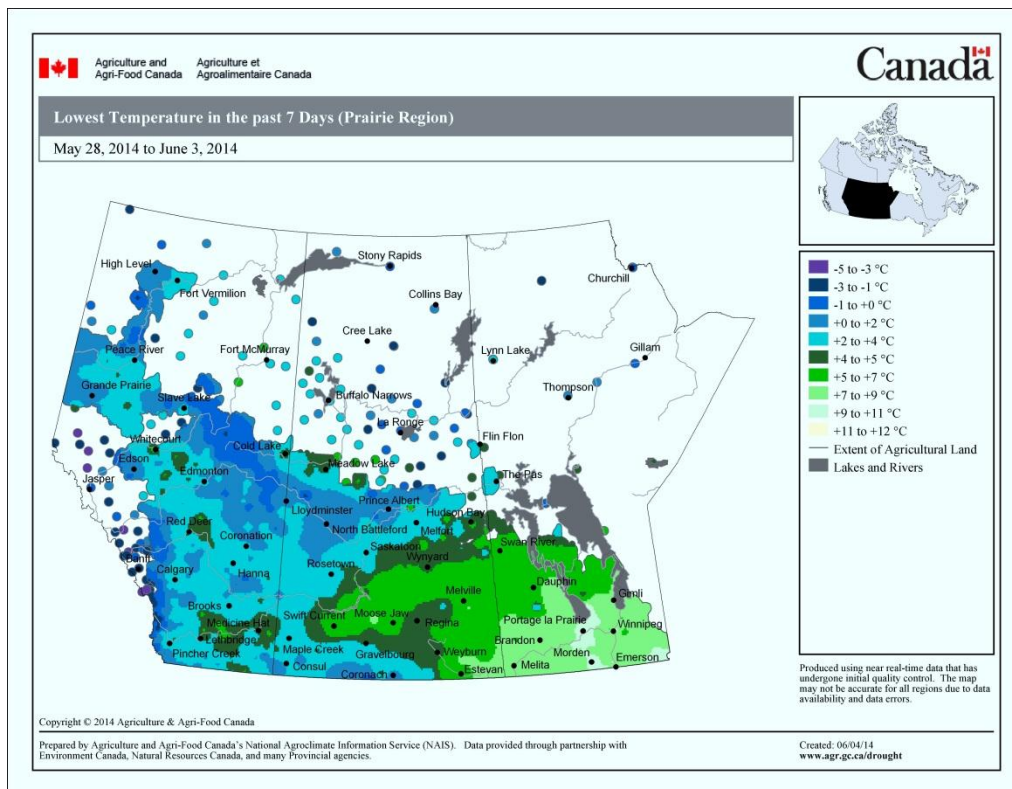




The map below shows the **Highest Temperatures the Past 7 Days (May 28-June 3, 2014)** across the prairies:

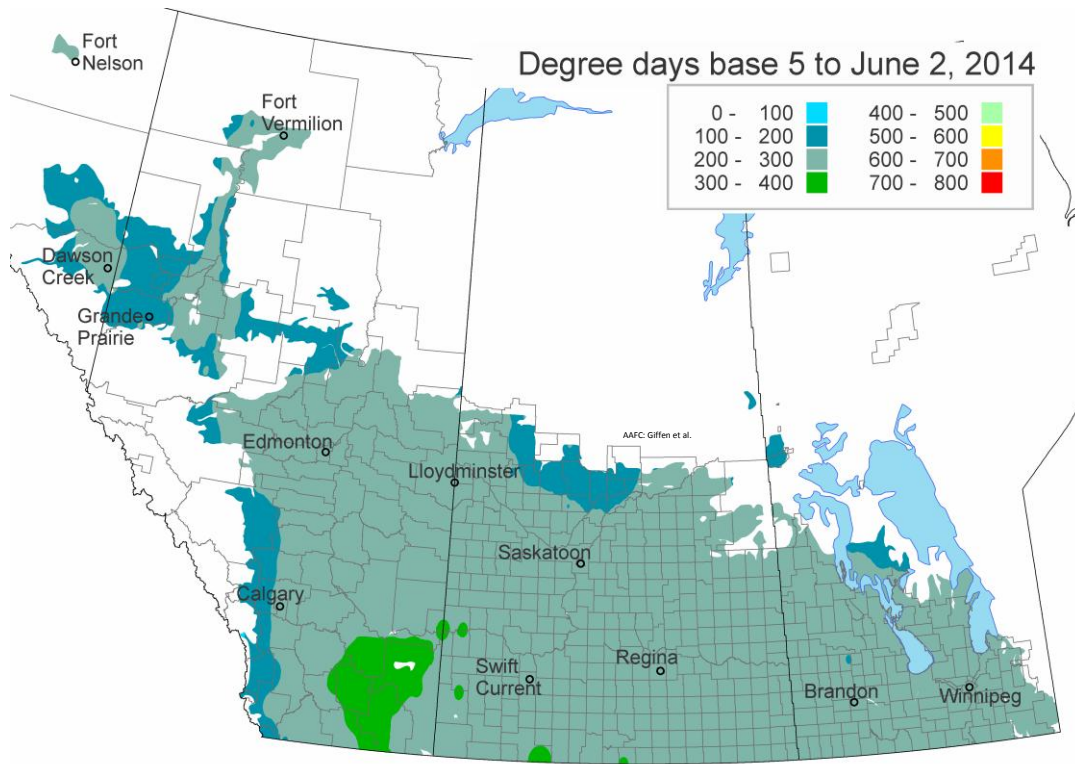


While the map below shows the **Lowest Temperatures the Past 7 Days (May 28-June 3, 2014)**:

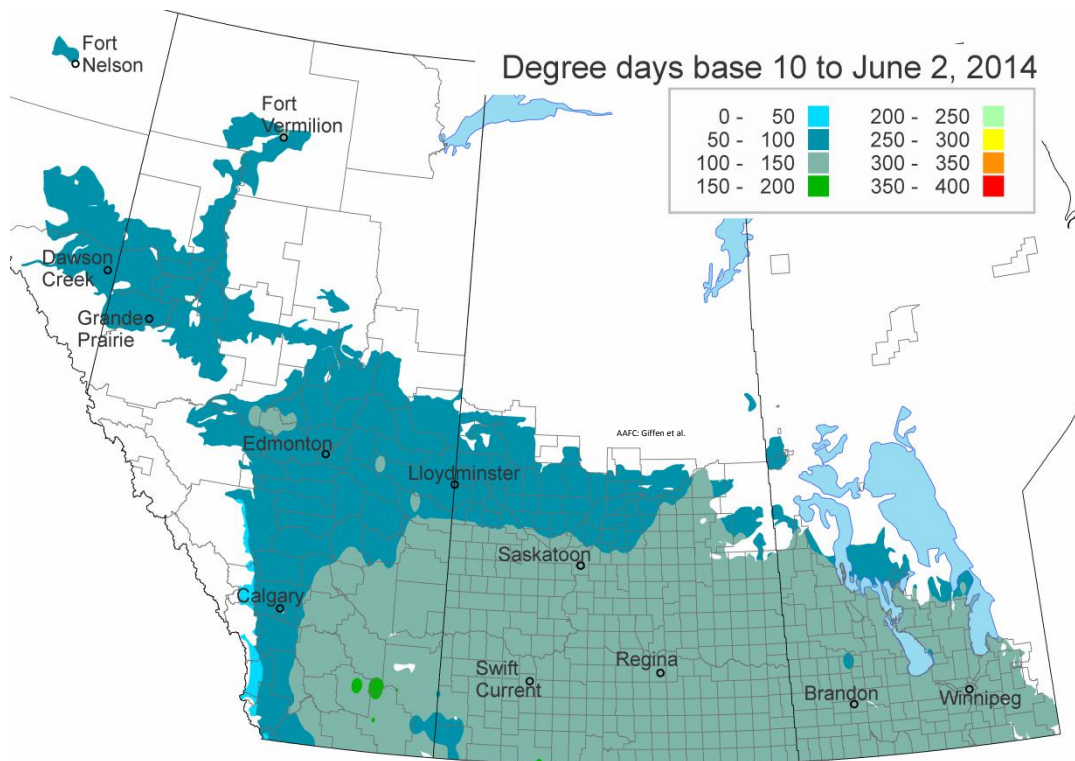




Growing degree day (GDD) estimates reflect the growing season, in terms of heat accumulation, across the prairies. Below is the **GDD (Base 5°C) for the Growing Season (April 1-June 2, 2014)**:



While below is the **GDD (Base 10°C) for the Growing Season (April 1-June 2, 2014)**:





2. Flea Beetles (Chrysomelidae: *Phyllotreta* species) – One last time - A reminder that the **Action Threshold** for flea beetles on canola remains **25% of cotyledon leaf area consumed**. Fact sheets for flea beetles in canola are posted by [Manitoba Agriculture, Food and Rural Development](#), and [Saskatchewan Agriculture](#). Also, Syngenta posts their "[Flea beetle field scouting guide](#)" which includes helpful images exemplifying percent of cotyledon leaf area consumed by flea beetles (check pages 8-15).

3. Cutworms (Noctuidae) – One last time - Comparatively low densities of cutworms have been observed in fields so far this growing season. This past week, cutworms were spotted in a few fields in Saskatchewan and in central plus southern Alberta. Growers are again reminded to watch for fields that are “slow” to emerge, are missing rows, include wilting or yellowing plants, have bare patches, or appear highly attractive to birds – these areas warrant a closer look.

Cutworm biology, species information, plus monitoring recommendations are available at the Prairie Pest Monitoring Network’s [Cutworm Monitoring Protocol](#). Also refer to these cutworm-specific fact sheets ([Manitoba Agriculture, Food and Rural Initiatives](#), [Alberta Agriculture, Food and Rural Development](#)).

Cutworm larvae are needed this spring for research – Please refer to this [website](#) for detailed collecting information and to help researchers obtain live cutworms. **If cutworms are spotted in Albertan fields**, please also consider using the Alberta Pest Surveillance Network’s “2014 Cutworm Reporting Tool” for online reporting located by clicking [here](#). Data entered at that website uploads to a live online [“Cutworm Map”](#).

4. Wind trajectories Related to Diamondback Moth (DBM) and Aster Leafhopper Introductions – High altitude air masses originate from southern locations and continuously move northerly to Canadian destinations. Insect pest species such as Diamondback moth and Aster leafhoppers, traditionally unable to overwinter above the 49th parallel, can utilize these air masses in the spring to move north from Mexico and the United States (southern or Pacific northwest). Please refer to earlier [Weekly Updates](#) for details related to backward and forward trajectories associated with air parcels moving over western Canadian locations.

Reverse Trajectories (RT)

a. Pacific Northwest (PNW) – The number of RT’s originating from the PNW has increased again over the last few days (Fig. 1 and 2).

Fig. 1.

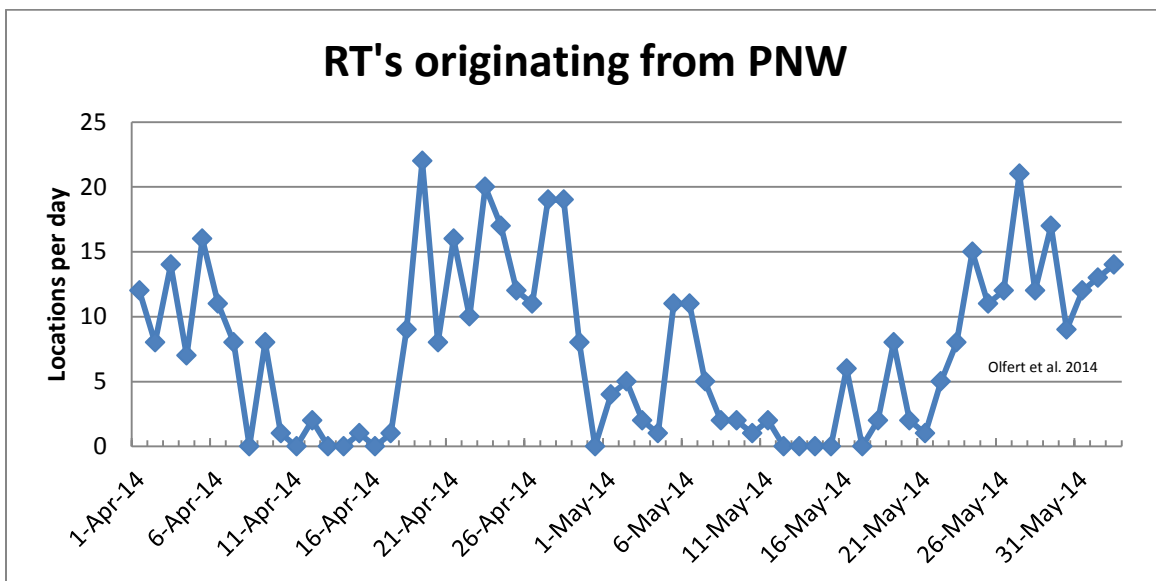
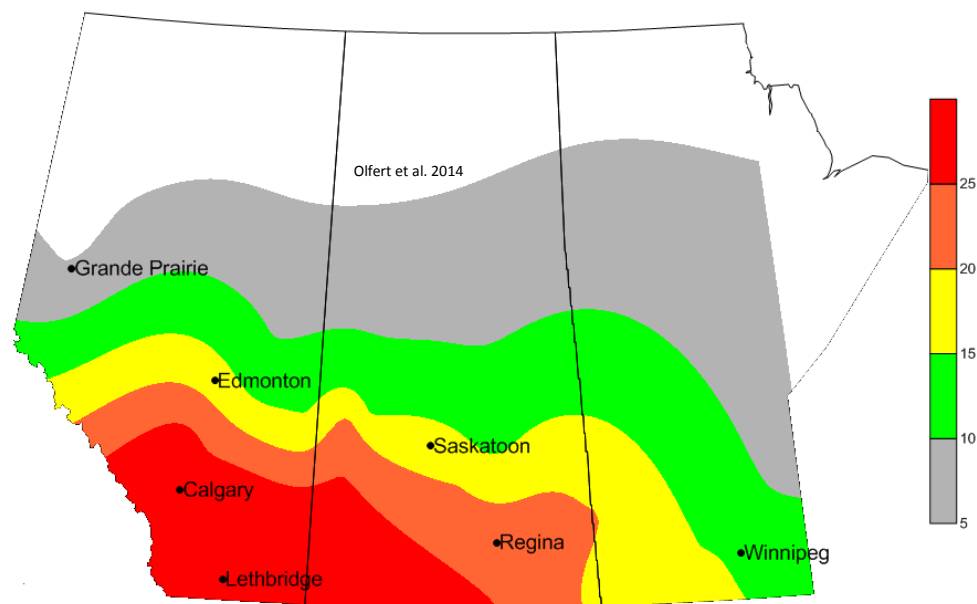




Fig. 2. Seasonal total number reverse trajectories originating from US PNW
April 1 - June 2, 2014



Diamondback moth pheromone monitoring – Prior to this week, pheromone trap counts across the prairies were low. Producers in Manitoba can access weekly DBM pheromone reports within Manitoba Agriculture and Rural Development’s “Insect and Disease Updates” which can be accessed by [linking here](#). John Gavloski’s most recent update (May 28, 2014) reported low DBM counts for all Manitoban sites.

This week, *Saskatchewan Agriculture’s* Scott Hartley reported an increase in DBM counts from sites located in central and east-central Saskatchewan (i.e., Marquis: 35 moths, Riverhurst: 19 moths, Yorkton: >100 moths). A projected wind trajectory appears to have travelled across these southern Saskatchewan sites. Producers in these areas will want to keep an eye on their young stands.

Producers in Alberta can access Alberta Agriculture and Rural Development’s DBM pheromone monitoring map which is updated daily and can be accessed by [linking here](#). The most recent map (June 5, 2014) reflects low DBM counts from reporting sites so far.

5. Pea Leaf Weevil (*Sitona lineatus*) – Overwintered adults were readily collected in winter peas in southern Alberta (Carcamo, May 14, 2014). Pea leaf weevils emerge in the spring primarily by flying (at temperatures above 17°C) or they may walk short distances. Pea leaf weevil movement into peas and faba beans is achieved primarily through flight. Adults are slender, greyish-brown measuring approximately 5 mm in length (Fig. 3). The pea leaf weevil resembles the sweet clover weevil (*Sitona cylindricollis*) yet the former is distinguished by three light-coloured stripes extending length-wise down thorax and sometimes the abdomen (Link here for the [Pea leaf weevil monitoring protocol](#) with photos of related weevils). All species of *Sitona*, including the pea leaf weevil, have a short snout.



Adults will feed upon the leaf margins and growing points of legume seedlings (alfalfa, clover, dry beans, faba beans, peas) and produce a characteristic, scalloped (notched) edge (Figures 4-6). Females lay 1000 to 1500 eggs in the soil either near or on developing pea or faba bean plants from May to June.



Fig. 3: Dorsal view of adult *S. lineatus* (Photo: H. Goulet).



Figure 4: Weevil damage consisting of notching on leaves (Photo: L. Dossdall).



Figure 5: Weevil feeding notches along perimeter of pea leaves (Photo: L. Dossdall).

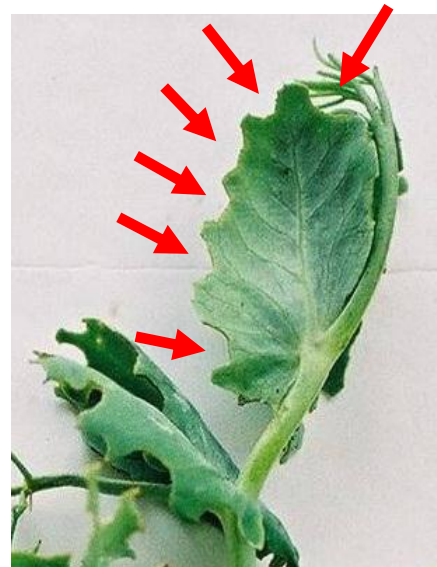


Figure 6: Pea leaf weevil feeding notches on clam leaf (Photo: L. Dossdall).



6. Insect Development and Simulation Outputs – Average daily temperatures (May 1-31, 2014) have been 1-2°C below normal. West-central Saskatchewan, northwest Saskatchewan and southeast Manitoba were the only areas with normal temperatures for May. Over the same period, prairie rainfall has been 98% of LTN.

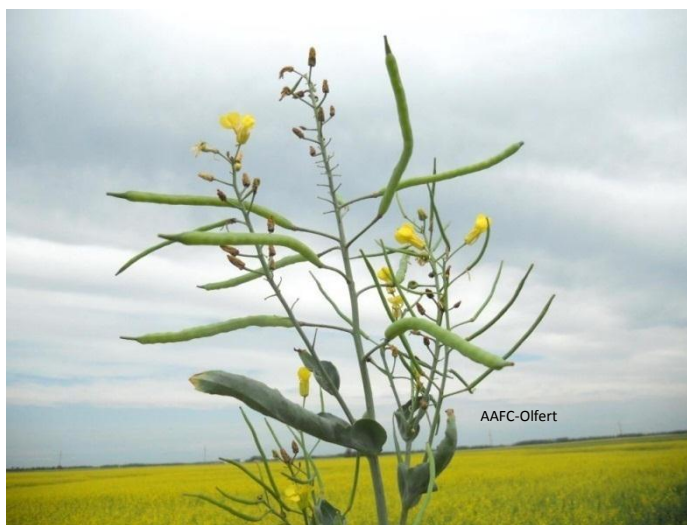
- a. **Swede Midge (*Contarinia nasturtii*)** – Model output predicted that oviposition is underway and larvae should occur in northeast Saskatchewan and northwest Manitoba.

For those participating in swede midge pheromone monitoring, please know that the **protocol was updated today to request that traps remain ~20cm from the ground level throughout the growing season.**

Remember to watch for unusual plant structures and plant discolourations then follow-up by closely scrutinizing the plant for larvae (Fig. 7).



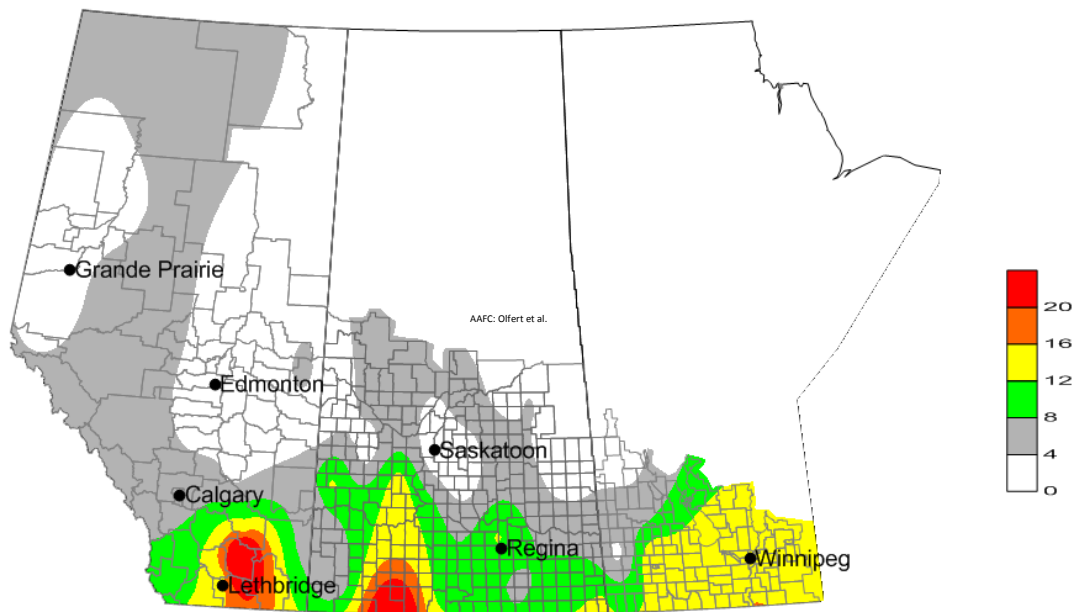
Fig. 7: Swede midge larvae inside canola flower (Upper) and canola damage observed in a field in Northeast Saskatchewan (Right; Photos: AAFC)



- b. **Cereal Leaf Beetles (*Oulema melanopus*)** – For 2014 we are using our cereal leaf beetle simulation model to monitor development across the prairies. **This week the model suggests that cereal leaf beetle larvae should be occurring across southern Alberta. In eastern Saskatchewan, larvae should be present in approximately one week.**
- c. **Grasshoppers** - Weekly temperature data collected across the prairies is incorporated into the simulation model which calculates estimates of grasshopper development stages based on biological parameters for *Melanoplus sanguinipes* (Migratory grasshopper). Recent warm temperatures have increased embryological development and **hatch is well underway across the southern prairies.** Hatch is predicted by the simulation model to be **greatest across southern regions of Alberta and Saskatchewan** (Fig. 8). Warmer conditions in southern Manitoba have resulted in rapid embryological development. Note that hatchlings were observed last week during surveys of southern and west-central Saskatchewan.

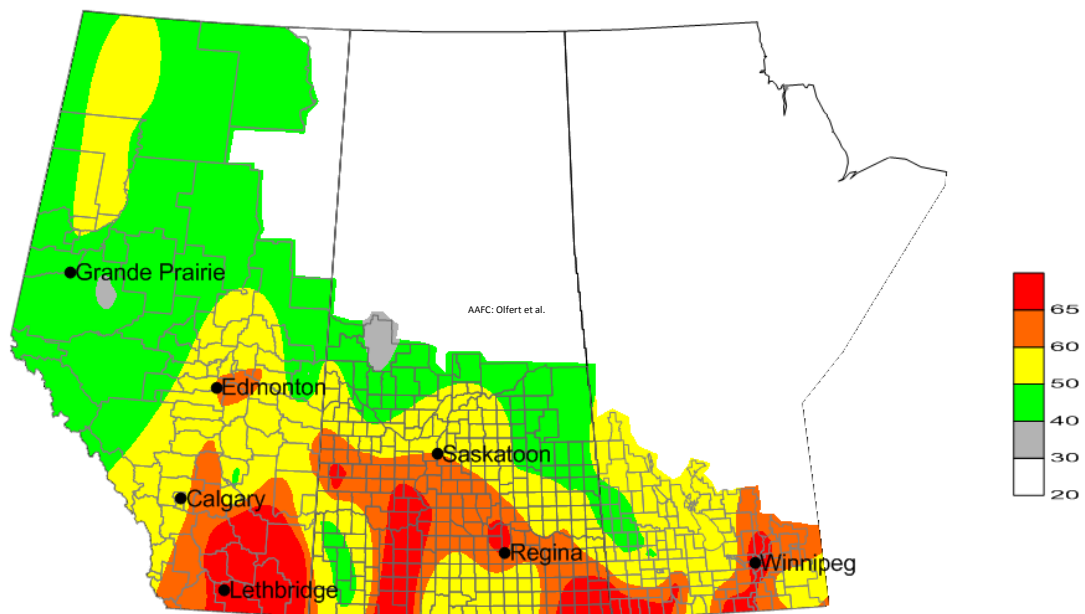


Fig. 8. Grasshopper % hatch
June 2, 2014



d. **Bertha armyworm (*Mamestra configurata*)** – Weekly temperature data collected across the prairies is similarly incorporated into the simulation model which calculates estimates of Bertha armyworm (BAW) development stages based on biological parameters for the species. The **BAW model indicates that pupal development is well underway and adults may begin to appear by mid-June** (Fig. 9).

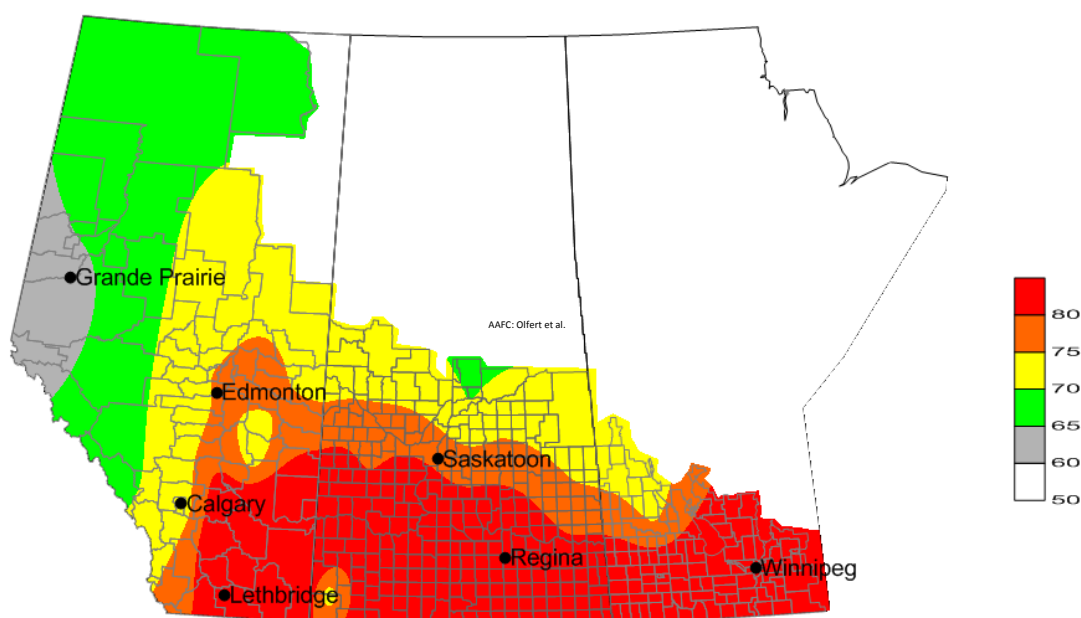
Fig. 9. BAW pupal development (%)
June 2, 2014





The initial emergence of adults for the 2014 growing season can occur when average pupal development reaches 80%. The model was used to predict BAW pupal development for June 12, 2014 (Fig. 10). Output indicates that **BAW adults could appear as early as June 10-15, 2014, across most of the southern prairies** (Fig. 10). Those of you participating in BAW pheromone trapping will want to anticipate pupal development and deploy your traps in time to intercept the earliest moths. ***This means cooperators based within the red and perhaps even the orange areas of the map below should please plan for traps to be set up in fields by June 12th.***

Fig. 10. BAW pupal development (%)
Model prediction for June 12, 2014



Important: Model runs for June 19, 2014, indicated that BAW pupal development would be complete across most of the province.

7. Crop Reports - The following provincial websites now have their Crop Reports posted so click the links to find their weekly updates:

- Manitoba's Crop Report: <http://www.gov.mb.ca/agriculture/crops/seasonal-reports/crop-report-archive/index.html>
- Saskatchewan's Crop Report: <http://www.agriculture.gov.sk.ca/crop-report>
- Alberta's Crop Report: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/sdd4191](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sdd4191)

Link here for the USDA's [Weekly Weather and Crop Bulletin](#).

8. Environment Canada: Weather Radar – When scheduling in-field scouting and pesticide applications, consider checking Environment Canada's radar data which shows **recent precipitation patterns** (linked to by [clicking here](#)). An example of the webpage is pasted below. Remember to note the time stamp in the top, right corner of the animation while it "plays" as either a 1-hr repeating animation or click the 3-hr long version.



Government of Canada / Gouvernement du Canada | Canada.gc.ca | Services | Departments | Français

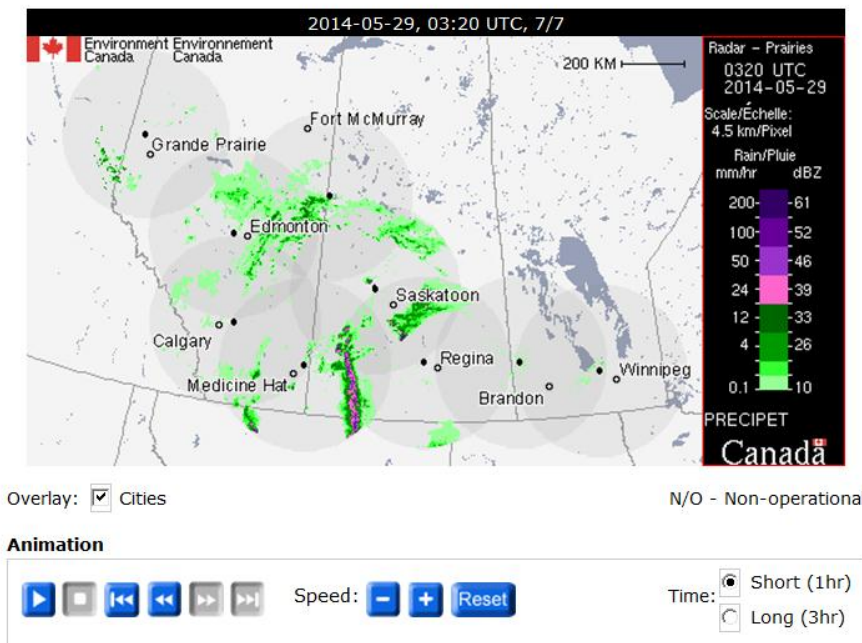
Weather

Weather Alerts Marine Air Quality Analyses and Modelling Past Weather

Home > Weather > Radar

Weather Radar - Prairies

Choose a province or radar station (radar stations are represented by black dots.)



More specifically, the following radar stations across the prairies provide the past one-hour or three-hour animated clips of precipitation patterns (click the town nearest you for website links): [Woodlands MB](#), [Foxwarren MB](#), [Bethune SK](#), [Radisson SK](#), [Jimmy Lake AB](#), [Schuler AB](#), [Strathmore AB](#), [Carvel AB](#), [Spirit River AB](#), [Prince George BC](#).

9. Questions or problems accessing the contents of this Weekly Update? Please e-mail or call either Owen.Olfert@agr.gc.ca (tel. 306-385-9355) or Jennifer.Otani@agr.gc.ca (tel. 780-354-5132). Past and present “Weekly Updates” are kindly posted to the Western Forum website by webmaster, Dr. Kelly Turkington. Please [click here](#) to link to that webpage.