

April 2014: Alberta PlantWatch Annual Newsletter

Greetings observers! I'm delighted to see so many bloom and leaf date observations, many from long-term observers. Thanks to everyone for your contributions to this program!

Our warmer autumns seem to be changing the way trees shed their leaves. Last spring, observer K. Edwards of Caroline noted that "again many trees – domestic and wild - had dry leaves when the buds were opening." Tree physiologist Dr. Janice Cook (U of Alberta) has reported that warm temperatures in September and early October, followed by cold, seem to result in trees keeping their leaves. This happens because trees don't start to senesce or prepare for winter early enough. In the Alberta species that we have studied, senescence appears to be triggered mainly by overnight low temperatures rather than by daytime highs. However, if the days are too cold, senescence will not complete, and leaves will stay on trees. For more info on the effects of warm autumns see our 2010 spring newsletter at plantwatch.naturealberta.ca/?page_id=57.



Abundant male cones on Colorado blue spruce in 2014

Spring 2013 seemed to be a big year for pollen on white spruce trees, at least in some areas (Edmonton; Hinton [observer H. Anderson]). Abundant male cones shed clouds of yellow pollen. In the city, Colorado blue spruce (planted) also had a banner year for pollen. If spruce have a 'mast' year with more seeds produced, it can boost the red squirrel population.



Bunchberry: The Fastest Plant on Earth!



Canada Bunchberry is a beautiful Plant Watch species

The spring 2014 newsletter of the Alberta Native Plant Council (www.anpc.ab.ca) had a delightful article by Kimberley Gould on explosive pollination in bunchberry. The author notes that although the flowers are small and inconspicuous, clustered at the centre of 4 showy creamy white bracts, they can send pollen an impressive 2.5 cm into the air, far enough to stick to the insect that triggered the release or to be caught on the wind and carried more than a metre before landing. Watch a video of the explosive action on YouTube (www.youtube.com/watch?v=aFR17bX0nol).

Phenology Can Benefit Your Garden

Are you a gardener? The timing of spring development depends on rising temperatures, so the flowering sequence of plants can be used to predict the best timing for garden practices such as seeding, transplanting and controlling insect pests. Check out phenology.osu.edu/2005PLANTPHENOLOGY.pdf for an interesting 'phenology calendar'. Pending funding, I plan to produce this for different regions in Alberta.

Albertans already have some great planting tips: Dr. Charlie Bird used to say: "plant your first seeds (lettuce, radishes, etc.) when the early blue violets flower". Others say: "when dandelions are blooming plant beets, lettuce, spinach and carrots". The common purple lilac

can direct both farmers and arborists: “be ready to cut hay 40 days after the lilacs flower”; “the best time to treat birch-leaf miner and gypsy-moth larvae is when lilacs are in full bloom.”



A productive Alberta garden near Sherwood Park

According to Liesbeth Leatherbarrow of the Calgary Horticultural Society, when the lilacs bloom it's time to nourish the lawn (i.e. top dress with a cm of compost or topsoil) and plant warm-season crops such as beans and corn. It should also be safe to plant out tomatoes, peppers and tender annuals. But other Calgary sources published 25 years ago, advised planting corn at an earlier time: when the lilac leaves are 1 inch (2.5 cm) long. Which corn planting time works best in your area?



Despite its prickles, wild rose is a lovely wildflower

Have you noticed any disease affecting our provincial flower, the wild rose? The ‘rose stem girdler’ is a beetle from Europe that lays eggs on roses. The larvae burrow under the bark in a characteristic spiral pattern. This cuts off the supply of water and nutrients and kills the branch. Loss of these important shrubs could have a big effect on our prairie habitats,

reducing shelter and food for jackrabbits and many other creatures. See www.producer.com/2013/05/beetle-threatens-iconic-symbol/

Do You Love Fly Fishing?

Bob Scamell's great book *The Phenological Fly* notes that North America's largest mayfly, whose emergence causes feeding frenzies in big brown trout, appears when the brown-eyed-Susan (*Gaillardia aristata*) blooms.

More Insect Buzziness



Bees visit many of our Plant Watch species. Canada's beekeepers have posted a “floral calendar” at www.beeflowerseasoncan.ca. You can test it by selecting “early spring in Alberta”. They note that both aspen and prairie crocus offer edible pollen to spring bees. To learn about the decline in wild and domestic bees, and how this is linked to our use of neonicotinoid pesticides, see the marvelous ‘Ted talk’ by scientist Marla Spivak at www.ted.com/talks/marla_spivak_why_bees_are_disappearing. Another great source is wildernesscommittee.org/publication/disappearing_bees_pollinators_peril.

Climate Change News

This spring the 5th report of the IPCC (Intergovernmental Panel on Climate Change) predicted with increased certainty damaging effects from climate change. www.theguardian.com/environment/2014/mar/28/ipcc-report-climate-change-report-human-natural-systems.

Thanks to the PlantWatch data you report, we now have almost 3 decades of information on how warming is affecting plants in Alberta.

This is a rare and precious resource. Adding historic data, we see that in rural central Alberta both aspen and prairie crocus bloomed 2 weeks earlier from 1931 to 2006 (see ‘Spring flowering response to climate change’ at www.naturewatch.ca/english/plantwatch/view_results.html).



Grace D flicks catkins to test for pollen shed

I've now entered almost all of your data in the computer. If you still have more plant dates from past years it is never too late to send them in! I am currently building a model to predict the timing of spring fire season, and there are many other ways these data could be used.

Plant Watch Program News

The **NatureWatch 2.0 Team** includes contributors from PlantWatch, FrogWatch, Ottawa U, Wilfred Laurier U, Nature Canada and the David Suzuki Foundation. Ottawa University is improving the webpage www.naturewatch.ca and then smartphone applications will be developed to help us track nature's calendar.

The **Alberta Plant Watch webpage** at plantwatch.naturealberta.ca has a new look, but more plant species need to be added and the data reporting system still needs work. We hope to find funds for this. If you have comments or suggestions let me know!

The **PopClock Program** tracks leafing times of aspen and balsam poplar to compare on-the-ground reports with satellite images. PopClock now has our 2013 data. You can see their winter 2014 newsletter at www.usanpn.org/files/shared/files/PopClockNewsWinter2014_NPN.pdf.

Observer Comments From 2013

Southern Alberta

Caroline. Fewer wildflowers than normal; Very few birds until mid-August; No ‘bugs’ in the poplars; Some mosquitoes in July, after the rain but not as many as in other years; Hardly any dragonflies; Many wasps for a couple of weeks, then almost none; Vegetable crops were good; Potato tops died earlier than usual but lots of potatoes albeit a bit small. (K. Edwards).

Calgary. Dry cool spring; Everything appeared 2 weeks later than usual; Abundant yellow butterflies noted this spring. (J. Froese). Floods changed Fish Creek observation area. Next year will be interesting, more nutrients. (D. Ramsay).

Heavier than normal snowfall mid-October to December 2012; Deep snow persisted, added to by normal to above normal January-March snow; Winter snow gone 29 March 2013, but mid-April snowstorm produced snow cover April 13-16; Mostly cool May and dry until May 22-31 (129 mm); Major June rains (141 mm); May-June rain 192% of normal; sloughs reached record values (1999-2013) on June 22-Level ground is squishy underfoot; Late crocus blooming with first small flowering May 14. “Spring explosion” of many species blooming May 8-17; Unusual numbers of early blue violets, golden bean and saline shooting star; Generally vegetation thick & high. (W.Brideaux).



Early blue violet is a welcome sign of spring

Finnegan, East of Drumheller. Great year for moisture, lovely wildflowers all over hillsides; June cooler, rain and showers; Green countryside. (E. Gillespie).

Walsh. Lots of wild bumblebees seemed to come when the golden bean began to bloom (May 4), the same time as the tree swallows returned to our nest boxes. (N. Spicer).

Foothills and Mountains

Crowsnest Pass. Great growing season; Big, abundant saskatoons; Unusually green in early August, it looked more like early July in a typical year. (D. McIntyre).

Kananakis. Barrier Lake Station. 24 cm snow May 23; heavy rains (282 mm) June 17-23; Low numbers of prairie crocus; Incredible numbers of twinflower; Lots of winterkill on the Labrador tea. (J. Buchanan-Mappin).

Banff. May 16 fields of prairie crocus still going strong; Never seen so many crocuses before, lasting such a long time. (L. Dowling).

Blue Hill Fire Tower (W of Rocky Mountain House). Very wet spring; Lots of snow then lots of rain, temperatures generally a bit below average. (S. Kinzel).

Sundre. Wonderful growing summer but spring began very dry; Copious rains produced phenomenal pasture and great hay; High humidity all summer; Nearly 6 months without a snowfall, which is rare here! (M. Halvorson).



Flooding Cougar Creek, Canmore (photo - J. Gibson Getty)

Jasper National Park East gate area. Lingering April snows in the backcountry due to cooler temps; More spring-like conditions in valley bottoms; Transition to 'true' spring conditions in early May; Earliest arrival of hummingbirds, and calling of wood frogs; Bumblebees abundant all summer, but particularly in early May on fragrant willow catkins; Heavy June rains then Pocahontas Marsh flooded; Flooding of rivers resulted in some major rechanneling (and impacts on

trails); Vegetation mostly lush; Early ripening of buffaloberry in the valley – very abundant crop; average Saskatoon production and good Chokecherry; Little brown bats were absent late August-early September. This is unusual and worrisome. (E. Slatter).

Central Alberta

Drayton Valley. No saskatoons again; Very few berries; Lots of dragonflies in June-July and many species of butterflies. (F. McKay).

Ranfurly. (E of Vegreville) 12 cm snow April 29; May 4, 1°C and May 6, 30°C; Lots of apples, pears, plums, cherries; Chokecherries the size of grapes; Excellent year to make jelly. (C. Mock).



Saskatoon flowers and fruits

Innisfail. Mountain ash did not bloom until 27 June, but then covered with berries; Lots of cherries; Very few saskatoons. (J. Henderson). Dandelions bloomed early and still going Oct 24; Saskatoons not as prolific as 2012. (E. Scott).

Delburne. Cool nights all summer! Very humid. (J. Campbell). Jackrabbits scarce in this area, possibly due to lack of native grassland, but also, predators can catch young in overgrazed pastures. (J. Potter).

Erskine. April 25th; finally some moths! This spring was late for moth emergences. (C. Bird).

Lacombe. Very warm in May after April cold (S. Bargholz); Very dry spring until May 23, then good rain for remainder of month; Wolf willow seemed to hardly flower at all; No Monarch butterflies this year. They made last year so interesting! Lots of grass on our 80 acres, but the deer and moose enjoyed our peas as much as we did, and nibbled on raspberry bushes, lettuce, beets; In late August-early September

the animals ate our potatoes and squash. They didn't just nibble either! (J. Meeres).

Ponoka. Pussy willow did not bloom until April 25. Very warm May 5-6, seemed to accelerate Aspen leaf out. Good raspberry year, fairly good saskatoons. (M.A. Predy).

Kelsey. First crocus did not bloom until May 2, after such a long dreary winter. Spring was cool and wet, but the moisture was really welcome. Most of the sloughs filled up. Saskatoons not as good this year as last, but chokecherries and wild raspberries were great! Had 2 families of bluebirds successfully fledge (first year without an outside cat) and even had a hummingbird come around! (M. Lambert)

Wainwright area. Excellent growing season; Waterbody levels nearly up to early 1980's 'bank full' recovery; Good moisture and ample native seed production; Drier trends from mid Aug thru Sept (P. Porter); Lots of rain and cool temps, good for saskatoons. (C. Snyder).



Rain/ snow melt refilled many sloughs in central Alberta

Leduc. Our bees survived the winter again which is really good; Growth of chickweed, wild asters, etc. absolutely phenomenal! (B. Bolton). Very cold late spring, still some snow around when the aspen poplars came out, but it was finally gone by the time the balsam poplar was out; Very dry, dusty and windy when the lilac leafed out but; We had some rain before the flowers came out; We seem to have spruce cones forming this year and the saskatoons are looking very good. (T. Abbott).

Tofield. Very wet year! Few butterflies compared to last year – only swallowtails had reasonable numbers; Saskatoons plentiful but compared to other years the berries were quite buggy. (C. Pattenden).

Sherwood Park. First rain came in last week of May; Wild rose bloomed June 6; End June-early July HOT. Lilacs full of bloom this year; Bumper crop of elm seeds; Fewer song birds in our parks and natural area; No barn swallows or purple martins, and no cliff swallows under the bridge at Bell lake. (L. McDonell).



A deep purple lilac

Edmonton. A mad spring with the sudden leap from cold to hot! American and Siberian elms bloomed in 2 days in Edmonton (latter had a big seed crop); By May 8th the balsam poplars had suddenly shed pollen and soon leaves were popping out; On our May Species Count (last weekend in May), flowers on woody plants were more advanced than on plants closer to the ground. Maybe the trees and shrubs enjoyed more early spring warmth than lower plants still chilled by the snowy refrigerator! A heavy crop of male cones on white spruce, then abundant seed cones at tree tops; In July some heavy, cone-laden tree tops were snapped off by high winds. (E. Beaubien)

Stony Plain. Many snowfalls and freezing rain throughout Feb to April; Leafing happened in a short time, around May 10; July 2 was a record temperature, very humid. (D. Crowe).

Onoway. May 6, 2013: this time last year there was ice on the lakes at higher elevations in the Glory Hills (just melting around edges, porous surface). Today, all ice is gone except for one small depression. Still snow patches on N-facing slope in the ditch (later than usual). The relative humidity (RH) here yesterday was down to 12% in the mid-afternoon, and it's only 10% today. The driest RH ever recorded was in Calgary at 6%, so this is really unusual. A

lightning storm at this time would be a real problem -could start a fire. (D. Downing).

Bon Accord. First sustained rain May 24; This season had much more consistent rainfall and plants profited; Tree swallows arrived May 3, approx. one week late; First hummingbird May 18, a few days late; Most birds in our yard arrived late, in smaller numbers, and 'set up house' with little courtship display. (B. Collier).

Western and Northern Alberta

Edson. Total snowfall of 8'3" last winter was a 30 year record; Aspen leaves opened a few days later than usual; First rain May 24 (about 3" that weekend) and rainy until the mid-Aug.; Our garden grew very slowly, a good 2-3 weeks behind schedule, but a beautiful Indian summer allowed for a bountiful harvest. (L. Alf).

Athabasca. Spring was 2 weeks later than usual; Bunchberries and wild strawberries produced as much bloom as usual, but scarcely any berries; In most places the same was true of saskatoons, pin cherries, choke cherries; Overall cooler than usual summer. (A. Stiles).

Tawatinaw. Spring came late and snow hung around hard as ice; May 6 had a record high (30°C approx.) then a dive to 6 °C May 7; First rainfall May 29; Lots of birds showed up late! (L. Horstman).



Pin cherry bouquets and ditches filled with wild roses

Wembley. In mid-June the Peace River country had beautiful wild roses - roadside ditches full of them, bright pinks and reds all the way to Hay River and beyond; September was flawless and October continued warm - ideal month, very warm with a little frost in the mornings. (M. Dommer).

Manning. Battle Tower. Deep snow and slow melt; Grass turned green in some areas under the snow; Rapid green-up when weather warmed; Saskatoons browsed by moose, so no flowers to report; Numerous light rain showers June 15-Aug 25. (R. Cowie).

High Level. Cold, long drawn out spring; snow piles on N side of bushes until mid-May; Saskatoons bloomed fully but dried out as no rain until early June; Ground too cold to plant garden until late May, but did well; Beautiful fall, no frost by Sept. 15; Leaves turned brown instead of yellow and wind blew them off; Much grain harvested by mid-Sept. (W. Askin).

Wood Buffalo National Park. A late spring, about 1.5 weeks later than usual; Still skiing May 1, but most snow melted by May 4-6; Bison mowed our crocus plots again this year – ate buds and flowers. In mid April 2010, park staff clipped shrubs and did a quick surface burn in one crocus plot. This got rid of snowberry shrubs, but also seemed to improve conditions for bison grazing. (M. Vassal).

A Quick Note on How to Observe

Try to report on plants that represent average timing for that species in your area, not the earliest or latest bloomers. Avoid using plants from hot, sheltered locations (e.g. warm sunny spots close to walls or fences), which may bloom well before most plants in the area.

Enjoy the Spring of 2014, tracking flowers!

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