

May 2015: Alberta PlantWatch Annual Newsletter



Hottest Year On Record!

2014 was officially the hottest year on record. On Jan 16 the Guardian wrote "NASA and NOAA scientists report 2014 was 0.07F° (0.04C°) higher than previous records and the 38th consecutive year of above-average temperatures. To see 2014's 15 hottest spots, go to <http://www.theguardian.com/environment/ng-interactive/2015/jan/16/15-of-the-hottest-spots-around-the-world-in-2014>.

In Britain, botanists were surprised by the results of their annual hunt for plants in flower on New Year's Day. There are usually 20-30 species in flower, but in 2014, the UK's warmest year on record, 368 plant species blooming! <http://www.bbc.co.uk/news/science-environment-30754443>



Dryness, warmth and wind: recipe for fire

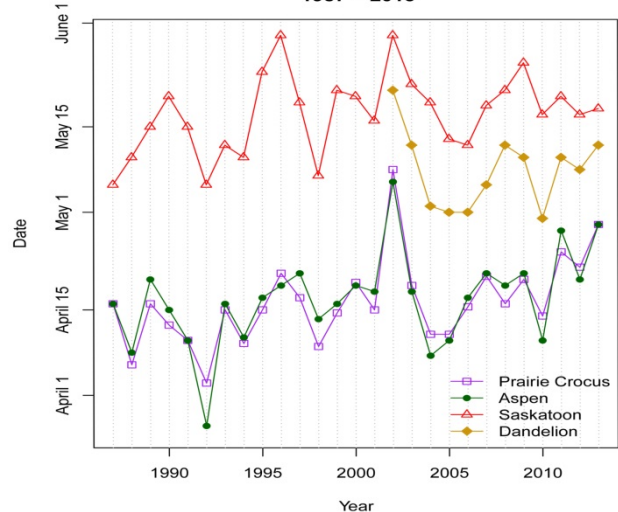
In 2014, the Northwest Territories had far more fires than usual, and the national parks had some challenging fires (<http://www.ctvnews.ca/canada/busy-fire-season-in-national-parks-shows-report-1.2051607>). This year, according to Alberta's Department of Environment and Sustainable Resource Development (ESRD) Wildland Fire communication, we've had 4 times more fire in Alberta by 23 April 2015 than at same time in 2014. All of those 2015 fires were human caused.

Tracking The Changes

One of the main goals of PlantWatch, is to measure and analyze changes in natural patterns over time. The following graph shows average bloom dates from 1987 to 2013 in Alberta's Central Parkland (the region with the most PlantWatch data reported). During this period, 1992 was the earliest year recorded for both aspen pollen shed and prairie crocus bloom. The second

earliest year will likely be this spring of 2015! The big El Nino in 1998 caused an early spike of blooming times, and another El Nino is predicted for this year, so spring may also be very early next spring, 2016.

Alberta Central Parkland: First Bloom Dates
1987 - 2013



This valuable information comes, in large part, from citizen scientists. Check out the new and improved National PlantWatch website www.naturewatch.ca. Now you can now report your observations and locations easily online. You can also access the webpage on your smart phone to report data using location from your phone's GPS, and/or to send us a photo of your observed plant. The NatureWatch team is applying for funds to continue improving the website, so please send us your suggestions. One idea is to create ways for observers to view the data, so that they can see trends over time. How would you like to see the dates analyzed and displayed? There have been many web updates, and we are happy to receive your observations on the web or on paper, if that is what you prefer!

2014 Was A Tricky Spring For Poplars

In late May 2014, most balsam poplars in central Alberta did not shed pollen, due to cold weather. Every year, on the last weekend of May, participants in the May Species Count record which plant species are in bloom. Last year, in many areas, we found fallen male balsam poplar catkins that had emerged to about 5+ cm in length and then frozen. The catkins faded from red to pale purple and fell from the tree. However, in Fort McMurray, Pat Marlowe noted that balsam poplar catkins seemed fine, but there was no pollen shed for

the aspen (aspen blooms a week or more before balsam poplar). The male aspen catkins never opened — many buds were too dry and just fell from the branch. About 60 km northeast of town, the tips of branches were wilted and black, apparently frozen.



Balsam poplar (left) and aspen poplar catkins

This spring, 2015, promises to be different. On May 11, Dorothy Fabijan was out collecting balsam poplar and aspen catkins for a botany class, one month earlier than last year.

Plant Watchers Watch More Than Plants!

In Crowsnest Pass, D. McIntyre reported that on 23 July 2014 they saw colossal numbers of small butterflies called European skippers. John Acorn notes this species is now very common in the lush parts of the province, especially the foothills. The caterpillars eat grass, and especially timothy. We would love to learn more about what butterflies visit or feed on the plants you observe for PlantWatch. To learn more about butterflies and how to contribute observations, visit www.e-butterfly.org. There are some great tutorials on how to identify, photograph and study butterflies at https://www.youtube.com/channel/UCLIGhIB0dw1AQc_xQNvADFw



European skipper

Not Buzziness As Usual

There has been a lot of ‘buzz’ about the loss of bees, and the role that persistent ‘neonic’ insecticides (used to coat seed of corn, canola, etc.) play in that loss. Native bees are also declining (see comments from observers below). A pollination exhibit at the Manitoba Museum (<http://www.prairiepollination.ca/>) says that “two thirds of our crop species worldwide depend on wild pollinators to some degree! Those pollinators need more than just crop plants to survive — they need wild plants too.” All of our PlantWatch species provide food for bees and/or butterflies!



Native bees visit a native aster

Observer Comments From 2014

Southern AB

Calgary. My study area, the north bank of Fish Creek Park, changed with the floods of 2005 and 2013. Trees are encroaching on the meadows, and the water table is higher. After the cold spring, warm weather hit and the blooms (all species) went crazy. Golden bean everywhere (D. Ramsay). At 2 pm on May 21st, NO saline shooting stars were blooming. On Thursday May 22nd at 2 PM so many were blooming I lost count! This is the first time first bloom and mid-bloom occurred on the same day for any species (W. Brideaux).

Monarch. Cool April; May cold and wet with snow on May 10th (M. Hafichuk).

Water Valley. Both wood violets and Venus’ slippers (calypso orchids) were abundant (R. Homister).

Mountains and foothills

Canmore. Wonderful season for wildflowers. Incredible number of calypso orchids, early blue violets, blue-eyed grass and round leaved orchids (J Buchanan-Mappin).

Jasper National Park - East Gate. First heavy rains in mid-April, hastened melt of remaining snowpack. Bees not apparent on early willow catkins. More bees by end of May and throughout the season. No big deluges in June, but enough rain to sustain greening and plant growth. Abundant local production of buffaloberries

(though very few near town of Jasper) plus lots berries on red osier dogwood and chokecherry. Low saskatoon production. July and August had more days of extreme fire danger, than normal. More little brown bats this year than last, but numbers seem generally decreased from observations in past years. Blackflies numerous in spring and late summer, but mosquitoes not a problem. Summer ended Sept 10th with a prairie blizzard (10-15 cm on heavy/ wet/ branch-breaking snow!) but Jasper town not affected (E. Slatter).

Kananaskis, Barrier Lake Tower. 4 feet of new snow in early May. Above average precipitation in June (C. McCullough).

Manning, Battle Tower. Weather extreme: hot, cold, dry, then wet. Saskatoons (many recovering from hungry moose) did not produce well, but raspberries were good in most areas. Tent caterpillars were common, and aspens were slow to recover (R. Cowie).

Rocky Mountain House area fire tower. A long cool spring. Out of 2 rows of lettuce only one plant came up – most of garden is like that. The soil was too cold for too long. 154 mm rain in June; 25 mm in July (S. Kinzel).



Saskatoons produced well in many parts of Alberta in 2014

Central Alberta

Bon Accord. First tree swallow arrived April 22, right on time. First 2 weeks of June, most days below average temperatures and wet. Berries (saskatoons, chokecherries) and perennial flowers 1-2 weeks late. Good news: July 1 we had about 5 barn swallows again in our yard; over the last several years we have not seen them (B. Collier).

Caroline. Lots of snow Oct 2013 to May 2014: 9 feet at least! Deer numbers seemed down – probably could not cope with the deep snow. Very few songbirds, lots of ravens. More birds and greater variety during the fall migration. 10 inches wet snow Sept 8-10 damaged trees and bushes, but many recovered. Fall colors brighter and longer-lasting than usual (K. Edwards).

Cremona. Many blooms on saskatoons, but light frost on June 10th. Finally (in Stampede week!) had

above average temperatures, then not again until early August. September 8-9 had over a foot of heavy wet snow (M.J. Davies, Z. Kondra).

Delburne. Lots of moisture. Very few bees (J. Campbell).

Devon area. Prairie crocus growing degree days (GDD; accumulated temperature needed to bloom) have varied from 35-100 over the years. Soil temperature may be more important than air temperature. Getting early winter snow before very cold temperatures may insulate the soil and influence spring bloom timing. Chokecherry is much more stable from year to year at 450 GDD (+\ -5%) (B. Janz).



Prairie crocus a hardy and beautiful harbinger of spring

Edmonton. North Saskatchewan River ice free at Groat Bridge on April 11th. On north edge of U of Alberta campus, aspen shed their first pollen on April 14th. In 2015, these same trees shed on March 28th, the earliest since 1992. Very good growing season in 2014; the volunteer-run 'Green-and-Gold Garden' on south campus had huge carrots and beets. City elms were heavily leafed, with no signs of aphids (E. Beaubien).

Erskine. A longer than normal winter. April 7th: saw the return of Canada Geese, Starlings, Crows, Robins, and Ring-billed Gulls. Great-horned Owls have been observed nesting and coyotes are pairing up (C. Bird).

Kelsey. May 11th: female bluebird back. May 12th: sparse crocuses, many frozen. Favorite wildflower, blue eyed grass, very abundant this year (M. Lambert).

Leduc. Long cold snowy winter; same amount of snow as last year. The few days before the aspen started to shed pollen were lovely, up to 20°C, then it snowed and we had cold and flurries for a week. The whole summer was very humid, so lots of mosquitos. Garden was slow starting, then it grew like mad and things like cabbage, corn and hay finished early. Lots of berries; saskatoons plump but early and dried up fast. Lots of wasps on all the fruit, especially raspberries! (T. Abbott)

Ponoka. Spring came slowly but it has been a great summer. Plenty of heat and sufficient moisture. Good

berry crop, though saskatoons were fewer this year than normal (M-A Predy)

Ranfurly. May 14th - very dry; May 29th - first hummingbird, May 31st - Mayday tree in full bloom and covered with honeybees. June 13th - lilac opened. August dry, so very little fruit (C. Mock).

Red Deer County. April 21st - first mourning cloak butterflies. More crocuses than usual this year (D. Murray). Very late, cold spring. Many cherries and currants (J. Henderson).

Sherwood Park. Spring arrived late. Boag Lake just east of Sherwood Park was still 90% ice covered May 4th. May 5th - 1000s of sandhill cranes migrating later than usual. June cold and quite dry. Lots of wild strawberries. Very few wild saskatoons, but fairly good crop on shrubs in our backyard. Good numbers of bumblebees. Few mosquitoes, so saw few dragonflies (L. McDonnell).



Bumblebees are common pollinators of common dandelion

Sundre. More snow than I can remember over the last decades. When the giant piles melted, up popped the daffodils, more plentiful than ever. Apple trees crowded with blossoms, but never saw more than 3 bees (usually bumblebees) on them at one time. Still had a good apple crop; +200 apples on a small tree. In recent years, the bee population picks up after apple blossoming. July was hot and more humid than usual, many days 25-30°C. Great year for beans and tomatoes. Hay cut late August, lay in fields waiting for dry weather, then 4 inches of snow September 8th (M. Halvorson). Everything at least 2 weeks late getting started this year. Good growing season; the blooming times seemed to be longer than in other years (A. Bakken).

Tawatinaw. Very rainy start to the growing season. Have never seen so much northern bedstraw. Its leaves, when made into a tasty tea, are a good immune system booster (L. Horstman).

Tofield. Abundant berries, including saskatoons, cranberries and gooseberries. Berries fatter and juicier than last year. Lots of swallowtail butterflies. Good rain most of the summer, but hot, dry August (C. Pattenden).

Wainwright. Another cold start to spring. Crocuses up a week later than usual. Early May was 5-10°C cooler than normal. More rainy days last 2 weeks of May. Good moisture throughout the growing season with 40 cm (15-16 inches) recorded = high end of normal (P. Porter).



Northern bedstraw flowers (Jun-Jul) and fruits (Jul-Aug)

Northern Alberta

Beaverlodge. Bumper crops of saskatoons this year. Excellent conditions, from flower to fruit stages. Lots of moisture from fall 2013 rain and then spring snow melt. Little rain in the growing season (1 inch). No lygus bug (insect) flower damage (weather too cool). No fungal fruit damage (too dry). So the best harvest in years! (J. Drabble).

Lac LaBiche. Very cold spring; very few insects, pollinators or otherwise. Swallows did not stay and nest due to lack of insects (R Creelman).

Wembley. Cold, wet spring. Hot summer. Very smoky from fires (M. Dommer).

Thank-you everyone for contributing your invaluable observations to Alberta PlantWatch! This program will be 30 years old in 2016, and many observers have contributed for two decades or longer. But this is just the beginning. One of the world's longest phenology data sets has been gathered by the Marsham family in the UK for over 2 centuries! To learn more about this, visit <http://conservationmagazine.org/2015/03/200-years-of-citizen-science-predict-the-future-of-forests/>

Acknowledgements

Many thanks to Linda Kershaw (for edits, layout and photos); observer Joanne Susut for financial support; Dr. Mike Flannigan & Alberta Innovates (for Green-up Fire Project support); to Nature Alberta (for webpage support) and to our dedicated Alberta PlantWatch observers (for participation!).

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