

April 2012: Alberta PlantWatch Annual Newsletter



Saskatoon shrub in full bloom

Our warm winter 2011-2012

The recent mild winter was the fourth warmest ever for most of North America. NASA scientists say that the global average surface temperature in 2011 was the ninth warmest since 1880. These findings continue a trend in which nine of the 10 warmest years in the modern meteorological record have occurred since the year 2000. Spring 2012 arrived early from coast to coast. Ontario had the warmest winter ever, and by mid-March their spring was about a month early. Here in Edmonton, the poplar trees will likely start blooming in the first week of April, 2 weeks earlier than last year! See the section below “observer comments” on the effects of last year’s cold spring, wet summer, and warm autumn.

Timing is everything

Warmer weather and earlier spring conditions affect many ecosystem components, including plant growth and animal activities. See Dr. Dan Johnson’s article on this subject in the Lethbridge Herald of March 2012 (<http://www.lethbridgeherald.com/public-professor/early-springs-may-be-more-common-33112.html>). Historic bloom dates are precious. Thoreau’s notes on bloom times have allowed phenology researchers to track climate change (<http://www.guardian.co.uk/books/2012/mar/14/henry-david-thoreau-climate-change>). Thanks to your help, our citizen science network, “Alberta PlantWatch,” gathers essential information to help us understand the impacts of weather and climate and to track changes within Alberta and Canada. Your reports on ‘the pulse of our planet’ are very valuable.

If you wish to see bloom dates from across Canada, all federal NatureWatch data is available for download at

<http://www.naturewatch.ca/english/download.html>.

As of February 2012 the Canada PlantWatch database contained over 12,000 observations. The Alberta data will be posted in the future.

Thanks to the many Alberta PlantWatchers who helped with student Jessie Roxby’s study of motivation in citizen science participants. See her ‘Why You Became a PlantWatcher’ letter under ‘News’ at the bottom of our homepage www.plantwatch.fanweb.ca. Jessie lists four main reasons for observers joining PlantWatch, including “interest in and concern for the environment and the specific study species”.

Two recent papers by Elisabeth Beaubien and Dr. Andreas Hamann are based on Alberta citizen science data. “Spring flowering response to climate change between 1936 and 2006 in Alberta, Canada” appeared last summer in the Journal of BioScience (61:514–524) <http://plantwatch.fanweb.ca/resources/1107-BioSci%20smaller%20file.pdf/view>. This article shows that climate change over the past 70 years appears to have pulled some of the province’s native wildflowers and trees into earlier blooming times, making them more vulnerable to damaging frosts, and ultimately, threatening reproduction. Central Alberta bloom dates for early spring species such as prairie crocus and aspen had advanced by two weeks over seven decades, with later-blooming species such as saskatoon and chokecherry being pushed ahead by up to six days. The average winter monthly temperature increased considerably over 70 years, with the greatest change (+5.3 C°) in February. “Plant phenology networks of citizen scientists: recommendations from two decades of experience in Canada” was published in 2011 in the International Journal of Biometeorology (55:833-841) <http://plantwatch.fanweb.ca/resources/IJB-Beaubien%20and%20Hamann%202011%20Preprint.pdf/view>. This paper describes the development of the Alberta and Canada PlantWatch programs. From 1987 to 2006, over 650 different Alberta PlantWatch observers reported 47,000 plant dates. Most of these data were from observers who participated in

PlantWatch for a decade or more! The most popular plant was saskatoon, with 4,900 observations. Saskatoon is excellent for observation because it is widespread, is relatively easy to recognize, has edible fruit so locations are known, and blooms rapidly so reported dates have high accuracy. Other well-reported plant species were prairie crocus, aspen, wolf willow and choke cherry. The table below is adapted from table 2, page 838 of this paper. It lists median dates (i.e. middle data values) for all the Alberta species for 2 decades (1987 to 2006). Some plant species have been observed for 20 years; others less.

<u>Common Name</u>	<u>First Bloom</u>
Prairie crocus	14 April
Aspen poplar	16 April
Larch	8 May
Dandelion	8 May
Early Blue Violet	10 May
Golden Bean	10 May
Bearberry	17 May
Saskatoon	17 May
Wild Strawberry	21 May
Choke Cherry	26 May
Star-flowered Sol. Seal	28 May
Common Purple Lilac	30 May
Lodgepole Pine	31 May
Wolf Willow	2 June
Labrador Tea	9 June
Bunchberry	9 June
White Mountain Avens	9 June
Northern Bedstraw	18 June
Twinflower	19 June
Yarrow	23 June

Some Observer Comments from 2011

NORTHERN ALBERTA

High Level: No rain until early July but more than enough after. Gardens good. Early blue violets very abundant and bloomed for a month. Best crop of tame raspberries ever. No wild saskatoons. Leaves still on the trees mid September-beautiful fall colours (W. Askin).

Fort Vermilion: by end of June fields infested with grasshoppers (G. Hayday).

Peace River: May: average precipitation, wet June and July: fantastic growing conditions. Plants responded with a spectacular show, blooming in greater abundance and over a longer period than most years (C. Stone).

Grande Prairie: lots of precipitation and therefore things seemed to green up early. Big winds kept the herds of mosquitoes at bay (V. Demuth).

Beaverlodge: Snow stayed right to the end of April. Seeding didn't start till May 5: a week to 10 days later than normal (J. Drabble).

Lac La Biche: Wild bees still low in numbers (R. Creelman). Don't recall ever seeing as much poplar fluff as we recently experienced. Some trees appeared to be snow covered. There was also a dandelion explosion this spring (T. Maccagno).

St. Paul: very good of crop choke cherries; picked 4 litres in 0.75 hr (V. Hudson).

Tawatinaw: 1st week of September; some plants of wild strawberry have started blooming again. Never saw this before and neither has a strawberry grower who also had fall blooming this year (L. Horstman).

CENTRAL ALBERTA

Bon Accord: first tree swallow was back right on schedule: 28 April 2011. Bird population numbers are way down this year for most species. Week of May 8 leaves erupted quickly (B. Collier).

Duffield: High winds May 14 when aspen leafed. Prolific blooms: dandelion, violet, strawberry, saskatoon, bedstraw. When spring showers came, even though it was cold, the saskatoons and other bushes were bent right over with the weight of the blossoms. Year ended with pleasant weather (30°C in September) and the farmers reaped a plentiful harvest. Nature is awesome! Wonder what next year will bring? (F. Jones).

Spruce Grove: The flowering shrubs (pincherry and saskatoon) were phenomenal!! The twinflower mat expanded significantly. Again I noticed that chokecherry plants along paved roads bloomed a few days earlier than the plants I observe, which are well away from the road (B. Janz).

Sherwood Park: Trees were later to bud and leaf out. Lots of moisture mid June. Good crop of backyard saskatoons. Despite lots of wild strawberry blossoms, fruit is scarce. Lots of wild mushrooms. Have never seen so many baby frogs! Lots of mosquitoes, lots of bees in the yard (L. McDonell).

Edmonton: Strong winds May 11 to 17th (drove the fire at Slave lake May 15). Spring blooms started late but caught up to average timing by end of May. Last week of June: heavy seed shed from balsam poplars in moist ravine valley locations. Perhaps these poplars are responding to drought by boosting seed production. By early August there were aphids sucking sap from trees and garden plants. Saskatoon berries small, but choke cherry fruit large and abundant (E. Beaubien).

Leduc: Tomatoes and potatoes rotted but corn and scarlet runners very productive. Bumper crop of raspberries and black currants (L. Shute). Lots of snow in the winter and then rain. Flooding by the end of July and almost drought conditions by October. Lots of berries on all the trees and shrubs but very few spruce cones (T. Abbott).

Kingman: Excellent wild & "tame" fruit crops (L.G. Eisert).

Kelsey: So much rain (18") this summer, and the mosquitoes were so bad, you could barely spend any time outside in my river valley. But everything was in abundant bloom. Prairie crocus late but abundant (M. Lambert).

Drayton Valley: No wild saskatoon berries again this year. In 2009: large berries everywhere. Grasshoppers very abundant this year even though it was so wet. Lots of dragonflies in late July and August (F. McKay).

Peers: very cold, wet spring. 6" of snow June 3-4th and frost overnight regularly from late May well into June. Garden was very slow to take off. Had 3 ½ " rain July 7-10! (L. Ahlf).

Ranfurly: April 22, still 4' snow banks in garden. May 16: 1st bumblebee in the house(C. Mock).

Between **Edgerton and Wainwright;** 2 tornadoes July 18 & 19. Last year we ate Saskatoon berries every morning all winter for breakfast. This year these berries very sparse due to late frost when they were flowering (C. Snyder).

WAINWRIGHT: great growing season! abundance of flowering plants. Lots of moisture until the end of July. Very dry conditions throughout fall. Plains rough fescue (grass) produced lots of seed (P. Porter).

Lloydminster: I've never seen such mixed up weather- too cold and wet and windy when berry bushes were in bloom- then extreme heat and back to wet! Some great patches of blueberries, but very sparse saskatoons, choke cherries, pin cherries, mooseberries, etc. What a joy to do this PlantWatching! (C. Lumley).

Lacombe : June: cold, wet. 62 ml of rain. Most rain in July in last 50 years! 200 ml total to Aug. 6. Never a gentle 3 day rain but deluges over 1 to 2 days, usually with lightning. Wildflowers extra abundant, most flowering later than usual. Wild raspberries and saskatoons plentiful, wild saskatoons small on our sandy soil, tame saskatoons plump. Exceptional cone production on spruces over the past year. Mosquitoes a problem right through the summer. Fewer than usual ladybird beetles and bees. We lost many birch and poplar trees in the last 10 years on our 80 acres; most trees that died were were balsam poplar (J. Meeres).

Lacombe: Abundance of crocus (clumps larger than usual) at J.J. Collett Natural Area. Deer ate some plants before they reached mid bloom (G. Hughes).

Red Deer county: As usual we sighted our first insects about the time the crocuses were in first bloom – Mourning cloak butterflies, a few Milberts Tortoiseshell butterflies, grasshoppers, ants, and moths (D. Murray).



Mourning cloak butterfly

Erskine: April 24th, 2011. This has to be one of the latest springs on record here. Male aspen catkins still not open. Many moths still have not appeared (C. Bird).

Innisfail: very few prairie crocus blooms (E. Scott).

Bowden: July 7th, 13th, and 19th: hailstorms. Mid August: warm dry weather arrives. End August: gardens & crops recovered fairly well-about 3 weeks behind. Wild berries poor. The best crop this year- mosquitoes! (S. Paton).

Caroline: Dandelions everywhere! our woods were 'white' with saskatoon and choke cherry blooms. Leaves of many aspen poplars turning brown at the beginning of August – hope this doesn't indicate that the trees are dying. More blueberries than usual in the Burnt Stick Lake area-some places were 'blue' with berries (K. Edwards).

Sundre: very late spring. Snow lying late into May. July was also cool. But August and September were glorious: warm but with enough rain to keep things refreshed. Good hay crops. One puzzle: scattered groups of poplar trees began turning brown mid-summer. Not losing leaves as with a bug infestation just looking poisoned. Weird! (M. Halvorson).

Hinton: Cool temperatures meant a delay in flowering by approx 2 weeks. Spruce pollen was very conspicuous May 29 to June 5. Our first crabapple blossom did not appear until June 3 (H. Anderson).

MOUNTAINS

Jasper – near town: cold, blustery April. I went up the lower-mid slopes of Fort Point Hill everyday from APRIL 1 until the bighorn sheep ate all the blooms (B. Klie).

Jasper - Pocahontas : sudden greening of landscape May 14 to 15. Very wet & cool June. No sustained periods of heat in July or August. September 5 to 10: last glorious week of warmth (30+) across AB . Blossoms on flowering shrubs, (especially saskatoon) profuse. Saskatoon fruit crop fair, choke cherries poor, red osier dogwood average, buffaloberry excellent (and early in valley bottom). Blackflies in spring: new phenomenon in these parts (E. Slatter). This observer kindly sent this haiku poem:

sense the primal hush -
forerunner to sweet stirrings
under April snows



Saskatoon flowers

Kananaskis valley: long blooming for prairie crocus, to mid June. High numbers of early blue violet and Solomon's seal. Incredible abundance of strawberry and twinflower blooms (J. Buchanan-Mappin).

Crowsnest pass: April 19th: snowshoed on drifts up to 15 m deep. We were literally walking within near reach of the upper canopy of big aspens. One effect of these massive drifts on the land is that, in melting, they shrink and compress. When they do this over fence line, they grab the fence and, as compression increases, pull it down, breaking wire and snapping fence posts. If you were to look at the results after all the snow has melted, you might think a D9 Cat, blade down, had driven right through the line. Similar results can occur if a tree is "grabbed" and pulled in an asymmetrical way, or if just its lower branches are grabbed and pulled straight down, they might break off while the rest of the tree is fine (D. McIntyre).

Crowsnest pass: By June 15 little snow gone from mountains (we're living in an icebox). August hot and dry. No lilac or choke cherry blooms. Many shrubs winter-killed (crabapples, lilac, mayday, roses). Northern bedstraw abundant and still blooming Aug. 30 (M. Primrose).



Choke cherry flowers

SOUTHERN ALBERTA

Carstairs: Aspen catkins about a month later than normal. Larch bloomed for first time in 5 years: terminal candles were 1.5 feet long and nearly 2 feet on the spruce. With the August heat we had a major 'population explosion' of aphids- on everything! (Z. Kondra, M.J. Davies).

Irricana: More moisture than usual. Crocus blooming spectacular especially in areas that are usually sparse. Violets were like blue blankets laid on the ground where usually you see the odd one here and there (J. Wright).

Calgary: early spring cold. All blooms about 2 weeks later than 2010. Normally the alpine larch in the mountains is golden by September 15, but this year still all green. Looked for purple saxifrage blooms at high altitude...checked all the known places but couldn't find any of them (D. Choy).

Calgary: April 18th: the latest and the deepest snowcover I've seen! April 23rd: crocus first bloom latest in 13 years. May 14-18: spring flower explosion. Sloughs reached 13 year high levels June 23 (W. Brideaux).

Pincher Creek: some aspen did not leaf out until June 16. No lilac blooms this year (D. Sheppard).

Hanna: Wonderful grass year. Hills covered with wild flowers: hard to see since grasses tall (E. Gillespie).

Monarch: many strawberry flowers. Slow bloom of lilac but lots of blossoms (M. Hafichuk).



Choke cherry fruit

Have a wonderful spring 2012, tracking flowers!

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