

2019

Alberta PlantWatch Annual Newsletter



PlantWatch in
the News



2018 Volunteer
Observations



PlantWatch
Crossword



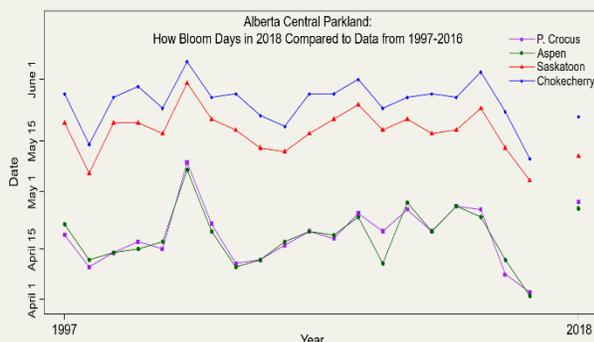
Hello, Alberta PlantWatch!

We wish to give a warm welcome and a sincere thank you to all of our volunteers from across the province. The 2018 season was another successful one as we saw so many data sheets and observer comments pour in. This program is successful because of our dedicated volunteers, and for that we are very grateful.

Summary of 2018

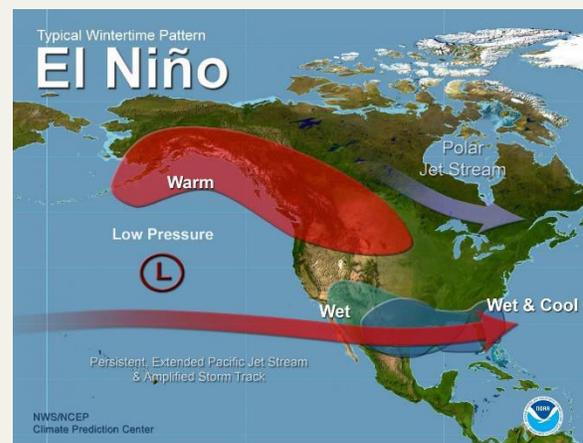
Over the last year, Elisabeth Beaubien was busy presenting phenology posters at 2 major conferences: the Intergovernmental Panel on Climate Change (IPCC) Cities Conference in Edmonton, Alberta, and an International Society of Biometeorology Phenology Conference in Melbourne, Australia. She also presented at 2 different workshops. The current goal is to find funds and a successor to coordinate Alberta PlantWatch, which is now entering its 33rd year!

In spring 2018 we experienced a higher than average snowpack, an unusually late spring, and an abruptly hot May that evolved into drought conditions across the province. Heavy smoke from the BC wildfires was also reported from our volunteers.



What to Expect This Season

How will the current El Niño affect the upcoming growing season in Alberta? According to recent reports issued by the National Oceanic and Atmospheric Administration (NOAA), the 2019 El Niño-Southern Oscillation indicates weak conditions at this time and is expected to continue through the northern hemisphere this spring (~80% chance) and summer (~60% chance).



Current El Niño movement pattern (Illustration courtesy NWS/NCEP Climate Prediction Center).

The upper-ocean heat content increased in February as above-average sea surface temperatures strengthened the El Niño conditions. Impacts of El Niño are typically less significant during the summer compared to the winter, but if the El Niño remains weak over the growing season, we could expect to see warmer weather than normal this summer.

To view ongoing updates on the El Niño, you can check out NOAA website:

<https://www.climate.gov/enso>



In the News

Victorian Era PlantWatch

In Pictou County, Nova Scotia, the early phenological work of Alexander MacKay created a data trove that spans over 100 years. Eager to create a “citizen science” movement, MacKay encouraged school children at Pictou Academy to observe the natural world around them and record any first appearances of plant and animal activity each spring. These records have been preserved and bound into rare book collections at the Museum of Natural History in Halifax.



A sample of MacKay’s records (Photo: Shaina Luck/CBC).

Fast forward to the present: Researchers at the University of Kentucky have incorporated the work of MacKay and his students by combining their early observations with current phenology records and environmental variables such as latitude and average sea temperatures to accurately predict when certain species will begin to flower. These species include wild

strawberry, apples, blackberries, purple lilac, and mayflowers.



Apple blossoms (Photo: Craig Paisley/CBC).

These collective records have allowed modern researchers to analyze and predict climate warming over time. The impact of simple observations by dedicated volunteers has been huge and reflects the importance of programs such as PlantWatch.

"I think it just shows that you don't have to be a scientist to be aware of these things and possibly make a difference."

-Laura Farro

Links to this CBC article and the mentioned publication can be found here:

<https://www.cbc.ca/news/canada/nova-scotia/alexander-mackay-climate-change-children-science-1.5063352>

2018 Volunteer Observations

Northern Alberta 2018

J. and N. Fuller – Athabasca, AB

Excellent spring weather, but Saskatoon berry and blueberry bushes were not productive on their property compared to nearby areas. The rest of Athabasca saw highly productive berry season.



Blueberry varieties in Alberta are Velvetleaf blueberry, Dwarf blueberry, Bog blueberry and Oval-leaf blueberry (Photo: Pixabay.com).

Did you know

Plants can recognize their own kin and also favor them. Studies have shown less competition among plants potted with their own 'siblings' than with strangers of the same species in which case plants increase their root growth to increase water and nutrient uptake.



Deciding on which plants to plant together might be more important than you might think (Photo: Pixnio.com)

R. Creelman – Lac La Biche, AB

There were major swings in temperature for most of the year. Very few pollinators until August. The tomato plants had many flowers but did not fruit until the end of July.

R. Hermanutz, M. Gelderman, T. Lund – Peace River, AB

Below average spring temperatures, heavier than normal snow pack in the winter.

T. Hrab – Bluesky, AB

Spring started early and was quite dry until the end of June. Temperatures were hotter overall for that summer. It was a poor year for squash crops. The smoke from wildfires persisted throughout the summer which seemed to have affected the mature stages of crops in the area. Saskatoon bushes were not as productive.

P. Marlowe - Fort McMurray, AB

There was an unusually high yield of saskatoons, crab apples, and peas. The plums did well too, but the early fall frost dropped many of them to the ground and reduced overall quality/quantity of the fruit. Since the 2016 wildfire, the forest understory is coming in well.

Central Alberta 2018

W. Daley – Olds, AB

In early May, many spring bulbs were spectacular and lasted a long time. Early blooming trees produced massive amounts of male flowers. Notable species included: Birch, Poplar, Hazelnut, Maple, Elm, Larch, and Common Juniper.

C. Pattenden – Tofield, AB

Aspen and balsam poplar flowers seemed to suddenly bloom at the same time. Saskatoons and cherries also exploded into bloom and did well. May was very hot and dry which left the yard looking yellow and brittle.

T. Krause – Red Deer County, AB

The 2017-2018 winter was long and very cold. A higher than normal snowpack overall. The summer was very hot and dry, but a lot of rainfall occurred in the fall.

T. Abbott – Leduc County, AB

Winter was late and then it was mid-summer. Most plants came rushing into bloom, but so abruptly that most flowers on the fruit trees dried up before doing to fruit. Saskatoons, apples, and cherries had little fruit. Lots of berries on dogwoods and rowans. The summer had very little rain and many leaves on the trees were already drying up before the fall.

G. Richardson – Darwell, AB

Poor saskatoon crop because the conditions were too dry. Apples were fairly successful. September saw a large snowfall quite early.

B. Collier – St. Albert, AB

Tree swallows arrived on April 27th. Temperatures were hot in spring.



Saskatoon Berries (*Amelanchier alnifolia*), though looking like blueberries, are more closely related to the apple family (Photo: Pixabay.com).

J. Henderson – Red Deer County, AB

There were many dandelions in late May. Mountain ash was covered in berries along with chokecherries and pin cherries. It was not a good year for sour cherries.

P. Jevne – Wetaskiwin, AB

It was a late spring with snow on the ground until late April. The last half of May included a heat wave that created a hot and dry summer with drought conditions.



M.J. Davies and L. Kondra – Carstairs, AB

Mid-April still had 3 feet of snow in some areas. There was a tremendous number of catkins on Populus trees, especially the female trees. When the capsules burst, the country side was covered with Populus seed. The branches were hanging with globs of fluff. The conifers all had high cone production, particularly the spruce and larch. There was no spring season. Winter ended and May had above normal temperatures that led to a hot and dry summer. Flowering times were not noticeably earlier than the previous year despite the warmer temperatures. However, the flowering period was short before quickly everything went to seed.



H. Loney Dickson
Female catkin, aspen poplar (Photo: Loney Dickson).

S. Kinzel – Rocky Mountain House, AB

The season started off very snowy and cold which delayed the growing cycle. It became hot and smoky with many flowers later in the season. A short bloom occurring in July/August with grass showing signs of water stress at this time.

M. Predy – Ponoka, AB

We seemed to go from winter to summer this year with very hot periods in May, June, July and August. Very poor berry and fruit crops as it was +30 when saskatoons and apples were blooming.

D. Crowe – Parkland County, AB

The winter had many short cold periods with little snow early in the season and more later in the winter. The snow stayed on the ground until the end of April when it suddenly warmed up in May. There was a rapid leaf out as conditions were dry and hot with little rain. Many butterflies were seen (blues, swallowtails, skippers, painted ladies, and cabbage whites).

R. Ernst – Camrose, AB

The spring of 2018 was drier and hotter than normal. The 2018 berry crop was similar to 2017, which was good overall.

J. Susut - Rimbey, AB

The first week of April saw temperatures colder than the first week of January. On April 28th the temperature rose to 27C and

the aspens bloomed with what I thought was a 100% catkin elongation and it seemed by the 29th the pollen had been shed. To me it seemed we didn't have a spring but went directly to summer. The plants seemed in a hurry to get blooming when they could; yet, when we did the May species count on May 29th we counted fifty varieties of plants in various stage of bloom. By June when I observed the yellow lady slippers I made a note that they had many blooms, but the blooms seemed smaller than usual.

This brings me to the vegetable garden. My potato crop yielded poorly with only a few potatoes under each hill. Other folks in the area reported the same results. In 2017 I had raspberries by the ice cream bucket full. In 2018 I froze 8 cups. The same applied to the grape crop 8 buckets of grapes in 2017, not enough to make one batch of jelly in 2018. In 2017 I made at least 24 jars of pin cherry jelly and in 2018 there wasn't a pin cherry to be had. The apples didn't yield either.



The leafcutter bee carries pollen 'dry' on her hair and thus pollinates more flowers than for instance the honey bee (Photo: Pixabay.com).

J. Brownlee – Red Deer, AB

There were noticeably more bees spotted in May than in previous years.

H. Zieger – Barrhead, AB

There was no spring this year. It was winter one week and then summer temperatures the next week. Very few wild lilies were seen this year.



Common yarrow (*Achillea millefolium*) has a very bitter taste but is still preferred by e.g. sheep and deer. (Photo: Flickr.com).

F. McKay – Drayton Valley, AB

It was an interesting growing season as many pests (insects, birds, and rodents) attacked the garden and area. Asters had many flowers on one stalk while many other flowers such as fireweed, goldenrod, and bunchberry flowered much earlier.

S. Bargholz – Lacombe, AB

Like much of Alberta, it was a cold spring until the latter part of May. Summer quickly moved in and everything jumped into summer.

C. Snyder – Clear Lake, AB

The Saskatoon berries in our area were very poor last summer. There were lots of blossoms on the bushes but I think some windy weather maybe interfered with that. I recall we had good rains and they seemed to be timely so I didn't need to water my vegetable garden out there very often.

Did you know

“Did you know short smoke exposure can trigger stomatal closure and reduce photosynthesis in deciduous and conifer tree species? A study by Calder et al. (2010) discovered that 5 out of the 6 tree species they studied experienced a 50% reduction in photosynthetic capacity after just 20 minutes of smoke exposure.”



Not only the fire but the smoke by itself can harm most plants severely. (Photo: pixabay.com).

P. Porter – Wainwright, AB

A very dry spring for April and May. I would have to say more flowering plants in June, July and August once the rains finally returned. I noticed quite a few Wood Lilies in bloom in July, even in the extreme topography/sand hills in the Edgerton/Ribstone area. Grass productivity (native and tame pastures) in most areas was reduced by half to two-thirds because of dry spring conditions, but mid to late summer had more moisture and things rebounded and greened up rather quickly. The fall was rather wet as the farmers can attest; they had trouble getting crops off in most areas. Tick populations in east-central Alberta have increased markedly over the past couple of years.



Foothills and Mountains 2018

L. Dowling – Banff, AB

Harsh winter with a lot of snow. Spring was very hot and some plants seemed to be stressed by how quickly spring occurred. June was cool followed by a hot, dry, smoky summer. In mountainous areas, subalpine flowers can buffalo berries were not as productive as previous years. Mountain ash did well. September was very cold and lots of snow.

H. Anderson – Hinton, AB

Warm mid-May temperatures initiated an early season bloom in the alpine of the Cardinal Divide (though not as early as in 2016). The weather alternated between cold and warm periods for the rest of the season. It was a good year for *Campanula lasiocarpa* (mountain harebell) which produced many flowers. When comparing the flowering period of 2018 to the average flowering dates for all species from 2008-2017, it was found that the average peak flowering date for early flowering species was 9.7-18.9 days earlier than previous years. Cooler weather later in the season seemed to set things back, with late season species flowering 1.6 days later than average.

E. Slatter – Jasper, AB

Very early spring with an increase in the number of bees. There were large hatches of mayflies, dragonflies, damselflies at the end of May. A major mushroom eruption

occurred mid-July and onward, and it seemed to be a late arrival for rufous Hummingbirds. There seemed to be no apparent decrease in the number of little brown bats from 2017.

Conditions supported lush growth of plants by late April despite a cold, wet spring. The general trend was one of weather fluctuations from extreme rainfall to extreme heat, though the parameters for extreme fire danger were met in Jasper National Park. It was a very productive year for saskatoons, buffaloberry, chokecherry, and red osier dogwood.



Canada buffaloberry, *Shepherdia canadensis*, is a deciduous perennial shrub with translucent, red or orange, oval fruits with a stony seed (Photo: Elisabeth Beaubien).

M. Halvorson – Sundre, AB

There was a huge amount of winter snow, but virtually no run off to replenish the aquifer. It was a fairly dry spring, but conditions became very hot and dry from mid-July to September. It was a very productive apple season. The potatoes did well.

J. Buchanan-Mappin – Canmore, AB

There was a late start to flowering in 2019. Winter temperatures continued through the first half of April with a lot of snow on the ground. Very few early violets flowered but flowering dates in early July seemed to be more normal.

M. Primrose – Crowsnest Pass, AB

Summer was quite varied. Winter seemed to have lasted a long time & the spring plants seemed to bloom at the same time instead of their usual staggered pattern. Lilac flowers were smaller and fewer than usual. The mosquitoes were impossible. Mosquito season lasted into the middle of August. June was cold & wet. Then half way through July the rains stopped & we had a drought into the end of October.

August was so hot that, even though the mosquitoes were gone, it was too hot to do anything outside. Then the forest fire smoke set in and trapped us in heat and bad air. Summer flowers like paint brush & fireweed were sparse & small. There were more aphids on the honeysuckles than we have seen before. Our spring, our water source, got very low. Field grasses dried out and yellowed by early August. More of the evergreens are showing signs of stress after 2 summers of such dry conditions.

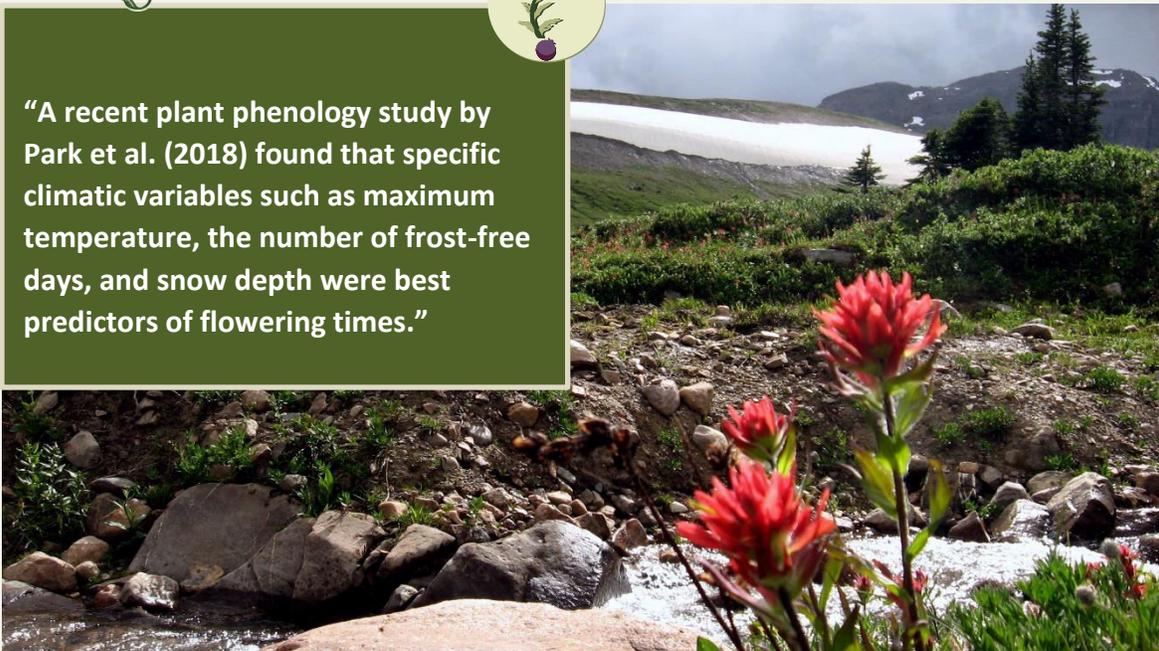
D. Ramsay – Foothills, AB

The heat wave came a bit later than in 2017. Saskatoon and chokecherry production was over abundant. Northern bedstraw bloomed forever, with blossoms continuing until mid-August.

Did you know



“A recent plant phenology study by Park et al. (2018) found that specific climatic variables such as maximum temperature, the number of frost-free days, and snow depth were best predictors of flowering times.”



Flowering times like here in Jasper national park, are dependent on a multitude of factors and some previously overlooked climate parameters (Photo: Wikimediacommons.org).



Southern Alberta 2018

M. Hafichuk – Monarch, AB

Much of the recording period was dry with rain later in the season. Another hot, dry summer for 2018. Effects from last summer's drought were noticeable as deer had little to forage on throughout the winter. They noticed deer switching their normal preferences to browse on cedar and juniper in their garden which has never happened in the past.



The Prairie Crocus (*Anemone patens*) is the first plant to bloom on the prairie (Photo: Ashley Tod).



Prairie Coneflower (*Ratibida columnifera*), also called Mexican hat (Photo: Ashley Tod).

L. Sudrich – Calgary SW, AB A large mast seeding event for spruce occurred and more than usual amounts of pollen for other species. Elm trees also released a larger amount of seeds. Overall, the winter was much colder than usual with a lot of snowfall. May was much hotter than usual.

L. Gillespie – Finnegan, AB

It was a late spring with cool nights. There were some unusually hot days, but overall it was very dry.

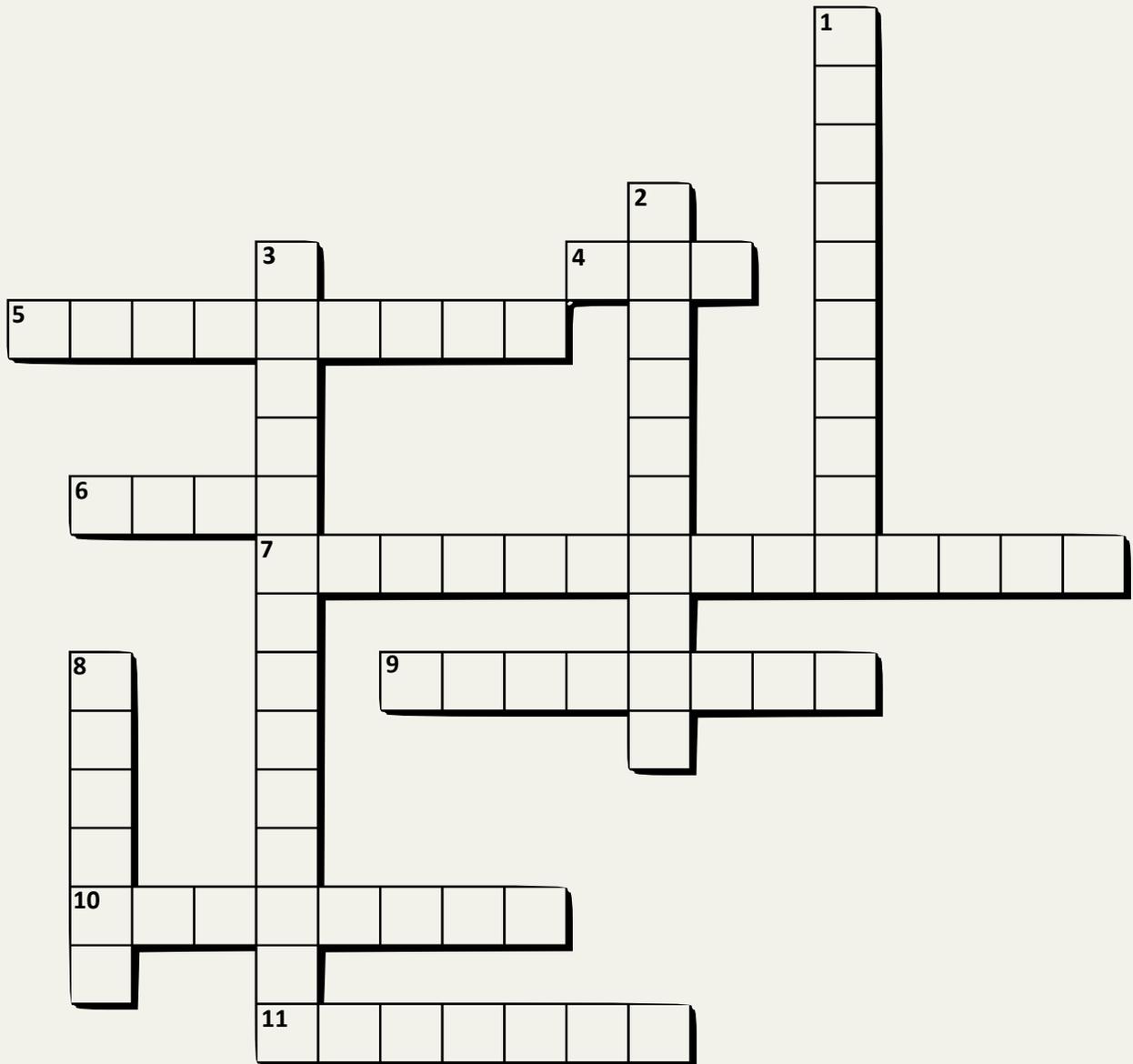
Did you know

The earth has more than 80,000 species of edible plants but 90% of the foods we eat come from just 30 plants. Choosing plants for food production is mostly based on growth rates and feasibility and not their nutritional content.





PlantWatch Crossword Puzzle





Across:

4. Often a sign of spring, this undeveloped shoot is found at the tip of a stem or in the axil of leaves.
5. The study of the timing of seasonal biological events in plants and animals.
6. The family the Saskatoon belongs to.
7. Being Manitoba's official flower, this plant is one of the first to bloom in the spring.
9. The common name of a native coniferous tree in Alberta that is also deciduous.
10. The Latin name for common yarrow refers to this Greek hero.
11. A climatic pattern of above-average sea surface temperatures in the tropical Pacific Ocean.

Down:

1. The common name for a low, creeping wildflower with pairs of delicate pinkish-white flowers.
2. The fastest moving plant on earth when launching pollen.
3. The provincial tree of Alberta.
8. The last name of a prominent Nova Scotian mathematician and naturalist.