Spring Newsletter April 2010

By Deanna Trowsdale-Mutafov,
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Welcome back PlantWatchers! Spring is here and the first plants will be making an appearance before we know it! I hope you will be able to enjoy the outdoors and also watch a flower or two bloom for PlantWatch. When the same plants are watched every year, we start to see trends developing in bloom times. This is important in climate change research. How are plants responding to changes in our climate over the years? When blooming times are affected, how are other species affected that rely on those plants for food? These are questions that need answering, and ecological monitoring by "citizen scientists" will help a great deal.

The timing of lifecycle events, known as **phenology**, is vitally important in a healthy ecosystem. But the "clock" that all of the plants and animals are listening to is running too fast. Scientists are now seeing this in every aspect of the natural world. Key pollinators, such as the honey bee, are disappearing, frog populations around the world are vanishing, and many bird and animal populations are declining dramatically. There are many reasons for these declines, but climate change is certainly one of the culprits. Scientist research has shown that spring, on average, is arriving roughly a week earlier than 50 years ago. That has caused ripple effects in natural ecosystems. For instance, if plants bloom earlier, insects and birds must adjust. Some species may respond better than others. Others will disappear.

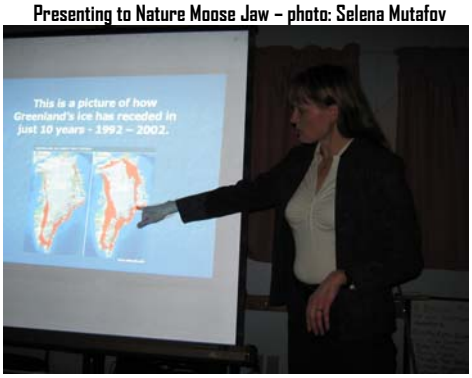
We can all make a difference in reducing our impact on the earth through daily actions and by practicing conservation in our homes and work places. Recently, the **NatureWatch** programs (PlantWatch, FrogWatch, IceWatch and WormWatch) have been mentioned in several magazines and newspapers as simple but effective ways that individuals or groups can participate in a climate change research project, and enjoy the natural world at the same time. Maybe this is one way to get in touch with the natural world again, and to get our youth outside and more interested in nature!

Over the past few months, over 180 blooming records were entered on the PlantWatch website at www.plantwatch.ca. Have a look at this website and check out the maps of where specific plants were recorded under the sidebar heading **View Results –** there are many locations in Saskatchewan where blooming results have been mapped. Have a look at **Educator Materials** for interesting information, including the new **PlantWatch Teacher's Guide,** a great guide for schools and youth groups. You can also review the plants that are watched in the program, under **Plant Descriptions.**

Education is a large part of the PlantWatch Program, and three additional PlantWatch presenters are educating youth with the PlantWatch and Climate Change presentation in several areas of the province. I am also continuing to give presentations to schools and groups. Getting youth interested in plants, animals, and the environment is vital to the future health of our planet. Also, encouraging them to reduce their impact on the planet is equally important. When enthusiastic kids take up the cause – look out! PlantWatch continues to be a **'growing'** program, in interest and in participation. Contact **Deanna at 780-9273 (Regina) or 1-800-667-4668** (SK only) for more information or to request materials. A new Canada in Bloom booklet is available, so let me know if you are interested in having one. Please feel free share this newsletter with other individuals, schools, or groups in your area. PlantWatch is always looking for more participants.

Deanna presenting to Meadow Lake Forest Wardens – photo: Fraser Hunter

Presenting to Nature Moose Jaw – photo: Selena Mutafov



Thank-you PlantWatchers!

A **BIG thank-you** to the PlantWatchers who submitted results from the spring and summer of 2009! Your results are very important in the PlantWatch program. I received data from Birch Hills, Christopher Lake, Estevan, Fenwood, Ft. Qu'Appelle, Humboldt, La Ronge, Leader, LeRoy, Livelong, Lloydminster, Marcelin, Mazenon, Prince Albert, Qu'Appelle, Regina, Saskatoon, Sceptre, and Yorkton.

From all data collected by Saskatchewan PlantWatchers in 2009, the **Dandelion** was the most watched plant with 25 blooming dates recorded (first and mid-blooms combined); **Common Purple Lilac** was a close second with 23 blooming dates recorded; and the **Saskatoon** came in third place with 19 blooming dates recorded. Choke Cherry, Wild Strawberry, Aspen Poplar and Prairie Crocus deserve honourable mention with submissions of 16, 15, 14, and 12 blooming dates respectively. The earliest bloom date recorded in 2009 was the Prairie Crocus on April 15th in Lloydminster.

I decided this year, on a suggestion from a participant, to conduct an informal survey of those who submitted results in 2009. Thank-you to those who submitted responses to these questions! I have tried to summarize the answers from the following people who responded to the survey: Dianne Allen, Bruce Farrer, Diana Flaman, Neal and Margaret Holt, Delwyn Jansen, Sandra Jewell, Cynthia Lumley, Moe Mareschel, Daisy Meyers, Cheryl Morse, Vi and Max Protz, Rick Walker and Don Wilson.

And the Survey Says…

1. Why do you participate in PlantWatch? What motivates you to be a PlantWatcher?

I grew up watching plants and enjoy it; it's fun going out to observe plants on native prairie; I hope I am contributing to science, and have learned to identify some new plants and learn more about them; it is natural for me to watch different plants and it's a good excuse to escape the city; PlantWatch helps me to id different plants and monitor their growing; I have always liked to keep records since I was small..; I hope that by plantwatching, we can aid in the evaluation of our climate, and draw conclusions and implement changes if needed; it motivates me to notice and discuss with other like-minded people; I've been involved in citizen science projects for years..; I want to contribute in anyway that I can, even if it is a small contribution; we enjoy observing the changes on our acreage through the season and hope it contributes to the bigger picture; the program is worthwhile and may help us see the bigger Saskatchewan picture….

2. Is enough information provided to PlantWatch participants on the details of the PlantWatch program, such as how to PlantWatch and what plants to watch?

The information provided seems to be sufficient for most to understand the program – a few participants feel more information would be overwhelming or unnecessary.

3. Do you appreciate the amount of climate change information in PlantWatch newsletters, brochures, website and other materials?

Almost everyone agreed that the information on climate change and phenology is important and interesting, and is so relevant to the PlantWatch program, and some would like to even see more. I will continue to include climate change information in all newsletters. Please check out www.plantwatch.ca and www.naturesask.ca (under Education and Monitoring) for additional climate change information.

4. In what ways could the PlantWatch program improve? (better communication with participants, more regular e-mails, etc.)

In general, most think that the communication regarding PlantWatch is quite good, although a few would like more regular e-mails on the program and on other environmental activities. ***If you would like information, such as newsletters, sent to you by e-mail only, please contact me and I will ensure that you are put on my e-mail only list.**

Remember to regularly check www.naturesask.ca for a wide variety of environmental information. You can also download many PlantWatch Saskatchewan materials, such as newsletters, brochures, and posters on this website.

5. What information would you like to see in the upcoming spring newsletter? Would you like more information on the other NatureWatch programs? Would you like to see more information on plant pollinators?

The answers were all very favourable to learning more about pollinators and the other NatureWatch programs. I have included articles in this newsletter about both, and also websites where you can find much more information about them.

6. Is the PlantWatch recording data sheet (sent with spring newsletter) easy to understand?

Most find the paper data recording sheet fairly easy to understand – the on-line one was somewhat confusing to participants. Questions were raised about adding new plants to the list – that is something that has to be reviewed each year, and I will take your suggestions into consideration. Regarding the recording of the geographic location of your plant, it is helpful to record the location in latitude and longitude if you know that. If not, then either supply a land location (section, township, range, meridian) or a best description of where it's located, such as address or distance from town.

PlantWatch, IceWatch, FrogWatch, WormWatch

PlantWatch is just one of the **NatureWatch** volunteer monitoring programs that people participate in across Canada. NatureWatch is a series of programs that encourage **you** to become a **citizen scientist**. NatureWatch helps you to learn about the environment while gathering the information scientists need to monitor and protect it. Data collected through all of the NatureWatch programs is being used to add to our knowledge of the effects of climate change and other impacts on biodiversity. The key to the NatureWatch programs is to monitor the same location in the same way every year.

What is IceWatch? Canada's rivers and lakes are excellent indicators of climate change. Scientists learn a lot about climate change by looking at annual freeze and thaw dates – days of the year when ice completely covers, then completely disappears from bodies of water. A water body should be chosen that you can easily monitor from a safe distance. Changes in this cycle over the years may be a sign that climate change is affecting our environment. People record ice on and ice off dates either on-line at www.icewatch.ca or can request an IceWatch reporting card.

What is FrogWatch? A variety of factors make frogs more susceptible to environmental changes than many other groups of organisms. These include the fact that frogs spend part of their life on land and part in the water, so changes in either habitat may affect them. They also have permeable skin which makes them prone to absorbing toxic chemicals or microorganisms through their skin as well. Frog eggs float in a jelly-like mass at or near the surface of the water, so they are prone to an increase in UV levels with the thinning of the ozone. Also, with the loss of wetlands and with increased droughts, frogs may not be able to breed as successfully. People monitor frogs best in the spring when males are calling. Because of their distinctive calls, frogs are easy to survey. Participants should listen for calling of frogs over a number of evenings and record what frogs are calling, when they are calling, and if they still calling there next year. You can check out www.frogwatch.ca and listen to frog calls in Saskatchewan, then report your findings on-line.

What is WormWatch? This is a science based education program that makes learning about soil ecosystem fun! The website www.wormwatch.ca has specific projects that invite people to collect data on earthworm species and habitats, and school activities for teachers and students. The purpose of WormWatch is to determine how many earthworm species are in Canada and where they live. Earthworms are very sensitive to soil disturbance, so learning more about the distribution of earthworm species can be used to improve soil health and reclaim degraded sites. The data is used to create a Canadian database of earthworm species and habitat distribution.

A Refresher on How to PlantWatch

1. Choose your plants - be sure to select plants that you can easily observe every day or two during the blooming season (there is a complete list of plants on the **recording datasheet**).
2. Select your site – try to choose plants that are growing in an easy-to-access, flat area.
3. Mark your site - label or tag the shrub or patch of species to watch, so you know that you are observing the same plants on each visit. Try to visit the same spot(s) each year.
4. **Start watching your plant closely in spring for swelling of buds** - record the date when your plant reaches first bloom. For most plants, the first bloom is when the first flowers open, but for some shrubs or trees, it is when flowers have opened in 3 different places. Go to www.plantwatch.ca to recognize when your plant has reached first bloom. Mid- bloom generally is when 50% of the flowers are open in the observed plant(s). Check out the PlantWatch website for your chosen flower, as mid-bloom varies among plants.
5. **Send your data observation sheet to the PlantWatch address**, or record your observations on the PlantWatch website at www.plantwatch.ca . ***Please let me know if you have entered your own data on the PlantWatch website**.*

Climate Myth: We Can't Do Anything About Climate Change

From: www.newscientist.com

It is certainly too late to stop **all** climate change. It is already under way, much in line with model predictions. And there are dangerous time lags. There have already been several decades of warming. The lags in organizing effective initiatives to reduce greenhouse gas emissions are also long.

But climate change is not an on-off switch. It is a continuing process. The sooner we stabilize atmospheric concentrations of greenhouse gases, the sooner we can reduce our impact on the climate and minimize the risk of reaching tipping points that will make preventing further warming even harder. Even if we only manage to slow warming rather than prevent it, societies will have more time to adjust to the changes. We all can do our part in many ways to slow the warming of our earth. Check out: www.stopglobalwarming.org/sgw_actionitems.asp; www.davidsuziki.org; www.worldwildlife.org/climate; www.pembina.org.

It is true that the action taken so far, such as the Kyoto Protocol, will only have a marginal effect. The protocol's authors have always described it as a first step. But even before it came into effect in 2005, the protocol has triggered some profound thinking among governments, corporations and citizens about their carbon footprint and how to reduce it. Industrialized countries such as the UK are planning for emissions reductions of 60% or more by mid-century.

We may find that once the process has begun, the world will lose its addiction to carbon fuels surprisingly quickly. Natural scientists fear "tipping points" in the climate system. But there are also tipping points in social, economic and political systems. Once under way, things can happen fast.

The great majority of the extra carbon dioxide in the atmosphere was put there by the developed world, with the US alone responsible for an estimated quarter of emissions since 1750. Future emissions may be dominated by large developing countries like China and India. While neither can be blamed for climate change so far, they clearly have to be part of the solution. That is probably the biggest challenge.

The industrialized nations have already emitted enough carbon dioxide to trigger significant warming. Humanity cannot afford for the developing world to take the same path. So a deal has to be done to prevent that. But today the technology to develop on a low-carbon path is much further advanced. And costs are coming down fast.

A new deal to save the world from climate change will probably involve large flows of technology and cash to the developing world. Developing countries are already being paid in cash and technology for not using ozone destroying chemicals in refrigerators and air-conditioning systems. The same must be done on a bigger scale to halt climate change. On a small scale, each of us must do our part in our own homes and communities – remember to **"think globally, and act locally".** **Good websites to use for the climate change skeptic**: www.gristmill.grist.org/skeptics www.logicalscience.com. www.tinyurl.com/ywtgpj; www.tinyurl.com/2onur8

Bumblebee-Winbledom-bees.co.uk

The Importance of Pollinators

Honeybee-mulley32.wordpress.com

With Excerpts from: "Fruitless Fall – the Collapse of the HoneyBee and the Coming Agriculture Crisis" by R. Jacobson; Diana Cox-Foster, a professor of entomology at Pennsylvania State University; & "The Incomparable Honeybee & the Economics of Pollination" by Dr. R. Halter.

Pollinators, such as butterflies, moths, flies, wasps and bees, are vitally important to plants of all kinds, including our PlantWatch species, and are an absolute necessity in guaranteeing the world's food supply. Pollinators are critical for many agricultural crops like squash, watermelon, almonds, apples, onions, broccoli, carrots, sunflower and others too numerous to mention. One of out every three bites of food that we consume is due to the work of honeybees! Insect pollinators are like truckers on an invisible web of highways between flowery restaurants. The beautiful petals and markings of flowers advertise that they hold food, in the form of nectar and pollen, which provide proteins and sugars that insects need to survive. In the midst of dining, insects accidentally transfer pollen between plants and initiate fertilization -creating seeds for the next generation of plants. If there are not enough pollinators, fruit and vegetable crops will be reduced, and what of our native landscapes?

If a complete collapse of the world's pollinators occurred, Albert Einstein predicted that mankind would only continue to survive for about 4 to 5 years! Pollinators have been in the news of late, especially with the phenomenon of Colony Collapse Disorder (or CCD). CCD – a term coined in 2007, when bee hives started collapsing - is when honeybees have been dying out in mass numbers around the world (more than 50 billion in 3 years), and there has been no clear answer as to why. But it looks like the pieces of the colony collapse disorder puzzle are starting to fit together. There are many camps of thought: the virus camp, the fungus camp, the pesticide camp, the parasitic varroa mite camp, and the nutrition camp. It turns out that everybody is right. (Well, everybody except the cell-phone and microwave-tower camps.)

Viruses compromise bees' ability to manufacture proteins, and proteins are the tools bees use to fight off pathogens, to detoxify pesticides, to repair their cells, and to meet all the world's other challenges. If bees lived in an utterly non-stressful world, they could go on despite the viruses. But of course they don't live in a world anything like that. Stresses such as sub-lethal pesticide exposure and lack of adequate nutritional sources (pollen and nectar) may be affecting the bees. In hundreds of samples of incoming pollen, teams at American Universities have found that over 99 percent have at least one pesticide contaminant, on average six different pesticides, and up to 35 different pesticides in a single sample. Over 100 different pesticides have been identified. Even if the root causes of colony collapse disorder have been identified, it shouldn't give us any comfort, as identifying CCD will not make it go away.

Honeybees are just one of the species we depend on that are struggling to withstand a steady stream of parasites and pathogens they have never encountered before, and have no tools to defend against. As the honeybee geneticist Tom Rinderer put it, "What has happened to our bees? Jet planes have happened." Even if we miraculously come up with solutions for varroa mites, pesticide poisoning and other threats, there will simply be another "black swan" that nobody could have predicted.

Honeybee health is inextricably linked to the health of the entire environment. If we can create systems of domestic food production that take their cues from the cycles of nature, and let honeybees play the roles they evolved to play, then the system will take care of itself. But if we continue to push the system farther and farther out of equilibrium by relying on chemical shortcuts and fossil fuel intervention to fix the inevitable breakdowns, then we will never get off the crisis treadmill. Consumers can help by buying organic foods and cottons, and organic honey from local beekeepers. Avoid the use of herbicides & pesticides in your yard. Plant a wide variety of native yellow and blue flowers, and yes, participate in the PlantWatch Program. ***Pollinator websites of interest**: www.pollinator.org; www.nicotinebees.com; www.wildlifegardeners.org; www.savenature.org/content/nature_academy/guides; www.savethebumblebees.com

Mourning cloak-richard-seaman.com

The Monarch Teacher Network (MTN) is Coming to Regina!

Get close and personal with butterflies-begin your exciting journey into learning and teaching about pollinators through the Monarch Butterfly Network!

MTN will be holding its' first ever Saskatchewan workshop in Regina, July 26 & 27, Regina Public School Office, 8:30 am - 3:00 pm each day.

For more information and to register visit: www.monarchteachernetwork-westerncanada.com

A final poem to remind us that we can try to save the world, but must savour it as well…

The Peace of Wild Things

When despair for the world grows in me
and I wake in the night at the least sound
in fear of what my life and my children's lives may be,
I go and lie down where the wood drake
rests in his beauty on the water, and the great heron feeds.

I come into the peace of wild things
who do not tax their lives with forethought
of grief. I come into the presence of still water.
And I feel above me the day-blind stars
waiting with their light. For a time
I rest in the grace of the world, and am free.

-Wendell Berry

Can you Name these PlantWatch Species…?

See bottom of page for answers

PlantWatch Saskatchewan is a program of Nature Saskatchewan

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Photo by: Kim Epp

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