



FOREST FIRES IN SASKATCHEWAN CREATE EXTREME AIR QUALITY ISSUES

The recent forest fires of late June and early July created High to Very High Health Risks to Saskatchewan residents as well as some states to the south. A thick band of smoke travelled through much of North Dakota, South Dakota, Minnesota, eastern Nebraska, Iowa, Illinois and Missouri. Smoke was also observed as far east as Tennessee.



HWY 969 near Montreal Lake

FOREST FIRES HAVE ONCE AGAIN CREATED POOR AIR QUALITY THROUGHOUT SAKATCHEWAN

Saskatchewan experienced an exceptionally warm dry spring this year resulting in one of the worst forest fire seasons in recent history. Hundreds of fires burned in northern Saskatchewan. Alberta and British Columbia were also plagued by the dry conditions and experienced fires similar to Saskatchewan. This year’s fires were extreme, forcing over 10,000 residents of northern Saskatchewan to be evacuated to centres in Saskatoon, Prince Albert, Regina and Cold Lake Alberta. The fire situation was over 10 times of what would be considered a “normal” number of hectares being burned.

In the first issue of our newsletter, we looked at the variety of chemicals that comprise the smoke. Particulate matter, a combination of solid particles and liquid droplets, is the major pollutant of concern from wildfire smoke. The Air Quality Health Index (AQHI) gives us a measure of how these chemicals may affect our population. Please see the article on the next page for an explanation of the various air quality indices and how they can be used to portray air quality over different time periods.

Great Plains Air Zone Meetings

The Board and GPAZ members met on July 8 2015. The Science Committee met on June 30, 2015. A few highlights of the July 8, 2015 meeting:

- The Airpointer on loan from the Ministry was refurbished and recalibrated and will be available for use by GPAZ this summer.
- The CAPMoN air station south of Regina will be reinstated.
- GPAZ will meet with Science Centre re monitoring partnership.
- GPAZ wishes to seek Cities support for air monitors.

Science Committee Meetings

- Review of monitoring locations – pros and cons for Regina site.
- Review of current industry air monitoring networks
 - Developing a mapping capability for air monitoring, land use, and industry air data
- GPAZ to look into partnering with federal government for First Nations air monitoring.

“We all have a share in quality air”

UPDATE TO MEETINGS

GPAZ will be placing the first air monitoring station in the network this summer. Unfortunately the monitor was not ready in time for the recent forest fire smoke due to some needed repairs and recalibration. The Science Committee has determined a site in east Regina would serve as the best location to begin the monitoring program. Look for the data on our website at www.gpaz.org in the next few weeks.

The Science Committee will continue looking into past air monitoring activities in the air zone and air monitoring by industry in the zone to prioritize representative air monitoring sites for GPAZ. If possible, another monitoring location may be added in early 2016.

AIR QUALITY INDEX, AIR QUALITY HEALTH INDEX, YEARLY AIR QUALITY INDEX

For over 30 years many jurisdictions in Canada have used an Air Quality Index (AQI) to characterize ambient levels of air pollution at a given location and time. The AQI also served as the basis for communicating the health significance of air pollution to the public as repeated exposure to high air pollution concentrations has been shown to increase the risk of cardiovascular disease, lung cancer and respiratory disease. Recently the Air Quality Health Index (AQHI) has been adopted in Saskatchewan which helps one understand the health risk posed by air pollution. Although the two indices have been in use for several years, the difference may be significant as not all pollutants are included in both indices. It's important to note that both of these indices are real-time indices and give a short-term snapshot of air pollution conditions at a particular location and time. But what are the major differences?

Differences in calculation. The AQHI is always calculated using three key air pollutants that are known to harm human health. - Ozone, Particulate Matter and Nitrogen Dioxide. The formulation of the AQHI is derived from the observed linkage between air pollutants and short term mortality. The AQHI uses a 10-point scale and a description of the health risk associated with that value. The index provides specific advice for people who are especially vulnerable to the effects of air pollution as well as the general public. The Regina AQHI is available on our website at www.gpaz.org.

The AQI is calculated using the concentrations of several pollutants in relation to their established air quality objective. The pollutants include Sulfur Dioxide, Ozone, Particulate Matter, Carbon Monoxide, Nitrogen Dioxide and Total Reduced Sulfur Compounds or Hydrogen Sulfide. The AQI value is based on the highest concentration of the single highest pollutant relative to its standard. Therefore the AQI is potentially influenced by a larger number of air pollutants, but the level at any point in time is based on just one pollutant. The AQI also shows more variation in day-to-day values as it uses a 0 to 100-point scale for measurement. A description of the air quality value is also provided for excellent, good, fair, poor and very poor air quality based on the AQI value at that time. Various locations that measure and report the AQI can be accessed at the provinces two other air zone websites, the Western Yellowhead Air Monitoring Zone www.wyamz.ca, and the Southeast Saskatchewan Airshed Association www.sesaa.ca.

Although there are differences in the calculation of the indices, the AQHI uses primarily pollutants that are associated with large urban areas, with traffic contributing greatly to the index. This would not be the case in rural areas of Saskatchewan where sulfur compounds from oil and gas wells may contribute to the index. These compounds would not be included in the AQHI.

There is also a yearly Air Quality Index the Saskatchewan Ministry of Environment uses to show longer term trends in air quality at a specific location. This index compiles yearly data into a single numeric value that represents the air quality at a particular location. The index chart was presented in our April 2015 newsletter and is also available in the Saskatchewan State of the Environment Report 2015.



Contact Us

Great Plains Air Zone

PO Box 32146 Victoria Square
Regina, Saskatchewan, S4N 7L2
306 540-0460
Email - gpazair@sasktel.net
Website - GPAZ.org

Dennis Perras
Executive Director - GPAZ



NEXT MEETING OF THE GREAT PLAINS AIR ZONE

At our last meeting it was determined a general meeting would take place on Wednesday October 21, 2015 at 9:30 AM (location to be determined). The Science Committee will be meeting at 9:00 on July 29, 2015 at the Ministry of Environment 3rd floor boardroom, 3211 Albert St. in Regina.

Have Information to share?

If you or your organization has an article or information pertaining to air quality, improvements to air quality control equipment, or upgrades to processes that improve air quality, please forward it so we can include it in our next newsletter.

GREAT PLAINS AIR ZONE

PO Box 32146 Victoria Square
Regina, Saskatchewan, S4N 7L2

GREAT PLAINS AIR ZONE MEMBERS