

Air Pollutant Volume

Why it matters

In order to evaluate air quality in Saskatchewan, it's important to know the total volume of air pollution produced. That volume is influenced by the particular characteristics of individual emissions and factors such as the weather, wind and temperature. In this section, we examine the total amounts of three primary air pollutants – fine particulates, sulphur dioxide and nitrogen oxides.

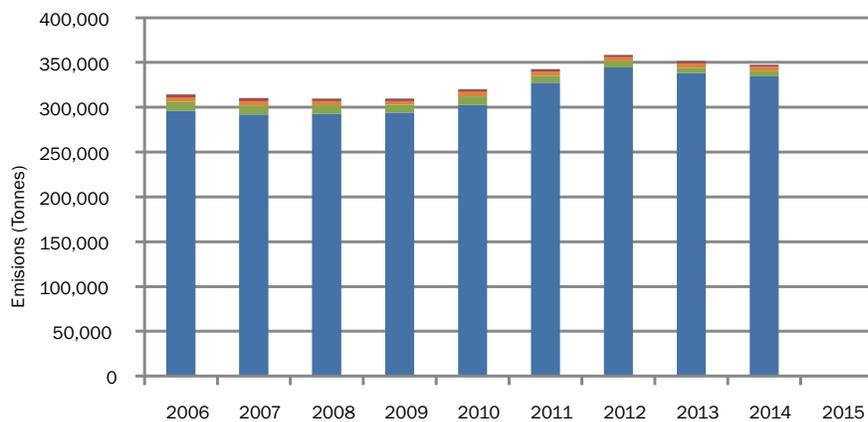
What is happening

All sectors of the Saskatchewan economy produce emissions. Oil, gas and mining, electrical generation, the transportation sector as well as agriculture, forest fires and road dust all play a role.

Generally speaking, levels of sulphur dioxide (SO₂) and nitrogen oxides (NO_x) have been dropping in Saskatchewan since 2010. However, we're seeing more fine particulates (PM_{2.5}) in the air, mainly due to more frequent and more extreme forest fires in Saskatchewan and across Canada.

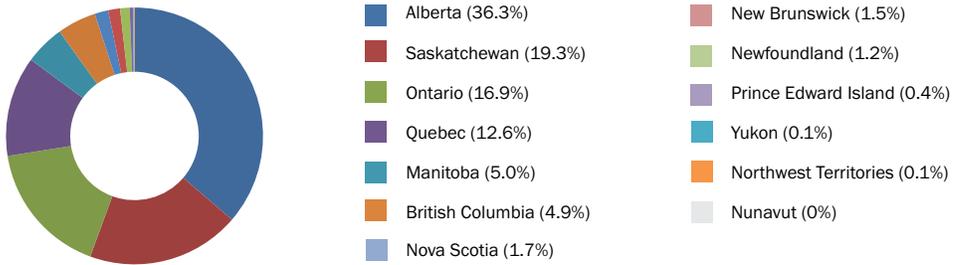
Particulate matter has increased in recent years, mainly due to extreme forest fire activity in Saskatchewan and across Canada.

Saskatchewan PM_{2.5} Emissions by Sector, 2014

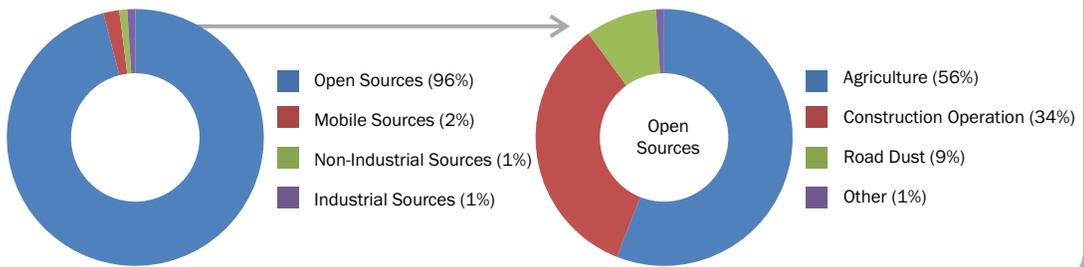


| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Industrial Sources | 5,108 | 5,045 | 4,723 | 3,975 | 4,894 | 4,847 | 4,655 | 4,863 | 4,823 |
| Non-Industrial Sources | 3,213 | 3,126 | 2,917 | 2,866 | 2,745 | 2,470 | 2,361 | 2,299 | 2,232 |
| Mobile Sources | 9,851 | 9,712 | 9,542 | 8,815 | 9,684 | 7,539 | 6,542 | 5,996 | 5,722 |
| Miscellaneous Sources | 291 | 296 | 288 | 294 | 291 | 291 | 296 | 297 | 296 |
| Open Sources | 296,217 | 292,053 | 292,584 | 293,979 | 302,582 | 327,528 | 344,609 | 338,239 | 334,528 |

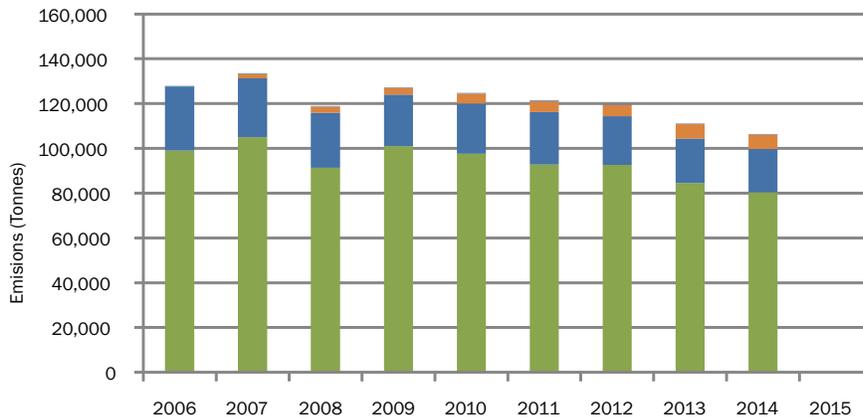
PM_{2.5} Emissions Across Canada



Saskatchewan PM_{2.5} Emissions by Sector, 2014

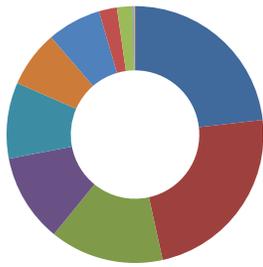


Saskatchewan SO₂ Emissions



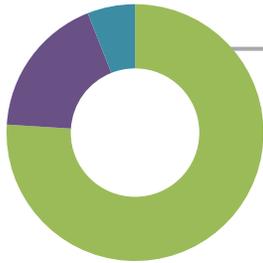
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------------------------|--------|---------|--------|---------|--------|--------|--------|--------|--------|
| Industrial Sources | 28,173 | 26,310 | 24,540 | 23,012 | 22,538 | 23,327 | 21,691 | 20,008 | 19,394 |
| Non-Industrial Sources | 99,076 | 105,005 | 91,324 | 100,975 | 97,569 | 92,815 | 92,601 | 84,464 | 80,397 |
| Mobile Sources | 441 | 194 | 156 | 133 | 161 | 155 | 147 | 146 | 147 |
| Incineration Sources | 8 | 8 | 7 | 7 | 7 | 7 | 6 | 6 | 6 |
| Open Sources | 25 | 1,820 | 2,703 | 2,948 | 4,327 | 4,957 | 5,057 | 6,286 | 6,290 |

SO₂ Emissions Across Canada

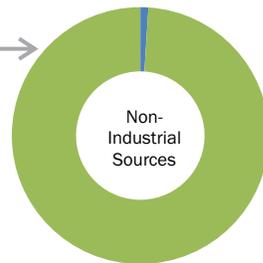


- Alberta (25.5%)
- Ontario (22.7%)
- Manitoba (13.9%)
- Quebec (10.8%)
- Saskatchewan (9.3%)
- British Columbia (6.9%)
- Nova Scotia (6.6%)
- Newfoundland (2.2%)
- New Brunswick (1.9%)
- Prince Edward Island (0.1%)
- Northwest Territories (0.1%)
- Nunavut (0.1%)
- Yukon (0%)

Saskatchewan SO₂ Emissions by Sector, 2014

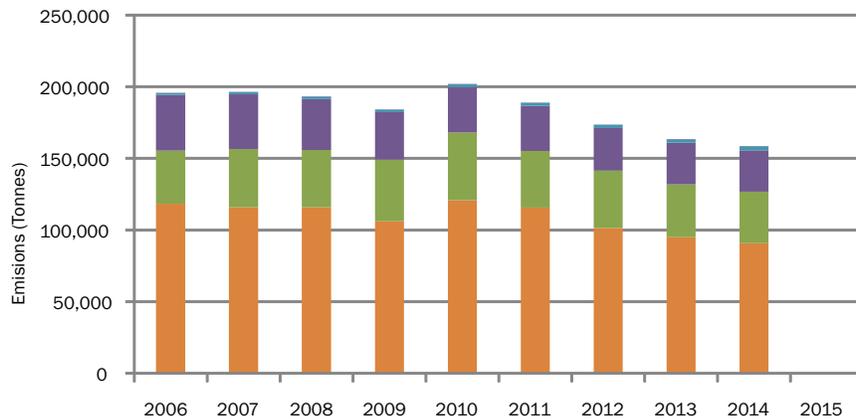


- Non-Industrial Sources (76%)
- Industrial Sources (18%)
- Open Sources (6%)
- Mobile Sources (0%)

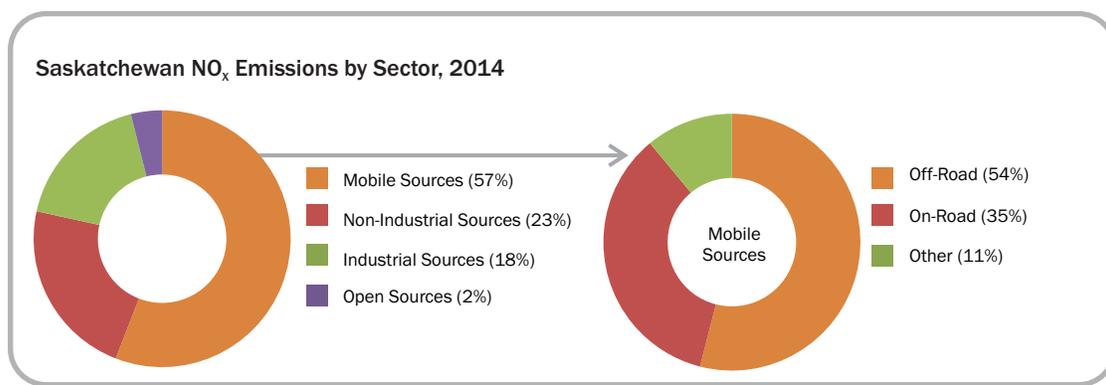
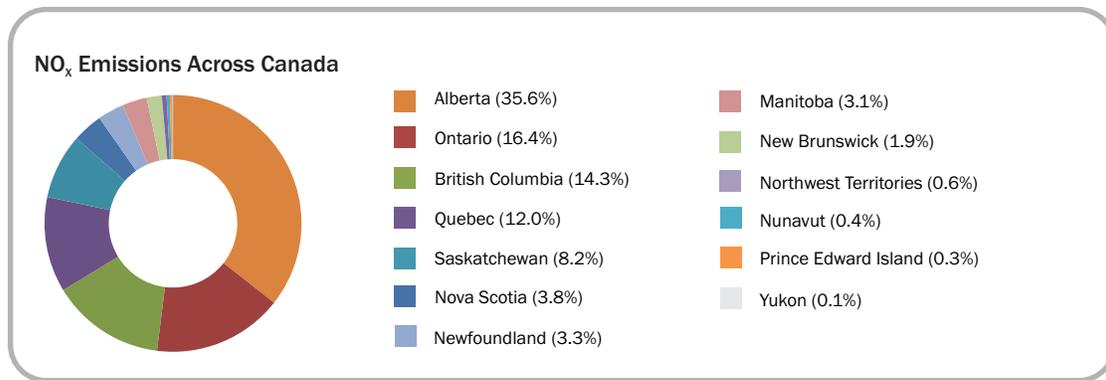


- Commercial Fuel Combustion (1%)
- Electric Power Generation - Utilities (99%)

Saskatchewan NO_x Emissions



| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------------------------|---------|---------|---------|---------|---------|---------|---------|--------|--------|
| Industrial Sources | 38,951 | 38,055 | 35,553 | 33,051 | 31,808 | 31,511 | 29,691 | 29,169 | 28,817 |
| Non-Industrial Sources | 36,869 | 40,643 | 39,917 | 42,949 | 47,144 | 39,508 | 40,014 | 36,873 | 36,030 |
| Mobile Sources | 118,425 | 115,888 | 115,954 | 106,179 | 120,820 | 115,696 | 101,374 | 94,922 | 90,838 |
| Incineration Sources | 9 | 9 | 9 | 9 | 9 | 9 | 7 | 7 | 7 |
| Miscellaneous Sources | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |
| Open Sources | 979 | 1,306 | 1,469 | 1,672 | 1,721 | 1,763 | 1,974 | 2,237 | 2,494 |



What we are doing

The Ministry of Environment supports Canada's National Pollutant Release Inventory (NPRI) program. NPRI collects, stores and distributes annual air emissions figures from all reporting sources. Our province is also an active member of Canada's Emissions Working Group. Its mandate is to coordinate the reporting of national trends and projections for future air pollution concentrations.

Saskatchewan has a number of tools available to help keep air quality high. That includes the province's Environmental Code, introduced on June 1, 2015. Also available is *The Environmental Management and Protection Act, 2010*. The Act calls for the preparation of an environmental protection plan for every major emissions source. Companies must make sure their operations meet Saskatchewan's air quality standards. This guarantees emissions do not harm air quality, the environment or human health. By January 1, 2020, all Saskatchewan companies that hold a valid clean air permit must have a ministry-approved environmental protection plan in place.

These emitters will be the subject of ministry inspections and compliance audits. Infractions will be investigated and enforcement actions will be put in place when warranted.

Saskatchewan released new air quality standards on June 1, 2015. The new standards replace outdated regulations and are more stringent than the rules they replace. The new standards also bring Saskatchewan in line with limits in place for other western provinces.

The federal government will also publish new standards this year for sulphur dioxide and nitrogen oxide levels. These new standards come as part of the requirements under *Canada's Environmental Protection Act, 1999*. The new regulations were developed following discussions with major industrial associations, non-governmental agencies and indigenous organizations. These new standards will replace ones that are 40 years old, and considerably less stringent than those in other countries.