

Under the Big Sky September 12, 2008

Hurricanes: Another weekend, another hurricane. The satellite image above shows Hurricane Ike, a Category 2 hurricane, the afternoon of 9/11/08. I've been reading that there have been hundreds of thousands of people evacuated from the Galveston and Houston, TX area. Haiti has taken four hurricane hits (Fay, Gustav, Hannah and Ike), with over 300 deaths and widespread damage that is affecting 800,000 people. MSNBC had an online article on Cuba and how effective their evacuations are. In the past decade, they have only had 22 deaths, while the US had 26 deaths just with Hurricane Gustav last weekend. Tropical Depression Lowell is also forming off the Mexican Baja Peninsula, and the remnants of Josephine in the Caribbean may intensify again. If you have family in the hurricane prone portions of the US, you can get all the latest information on the hurricanes from the National Hurricane Center website at: <http://www.nhc.noaa.gov/> If you are interested in the names for Hurricanes and what they next storms will be, you can see them at: <http://www.nhc.noaa.gov/aboutnames.shtml> MSNBC article on Cuba: <http://www.msnbc.msn.com/id/26647041/>

Frost hits isolated areas: Earlier this week, the temperatures dipped a little low in some of the creek and river bottom valleys. I had an email from someone just outside of Glasgow who had their garden zapped hard by the frost, while the official low temperature at the airport was 36 degrees. They wanted to know the earliest frost date and the average frost date. It turns out that for Glasgow, the earliest frost was August 23, 1928, and the average frost date is Sept 25th. The first freeze date (28 degrees) averages around Oct 4th. If you are curious what your average frost and freeze dates are, go to the following website: <http://www.weather.gov/climate/xmacis.php?wfo=ggw>

You will want to select the First/Last Dates under block #1. In block #2, select the cooperative weather observation site closest to your area (you may want to look at several that are north, south, east and west of you). They in block #3, select minimum temperature, and in block #4 select 1971-2000. This is the time period that we use for establishing "normals" and we update it every decade.

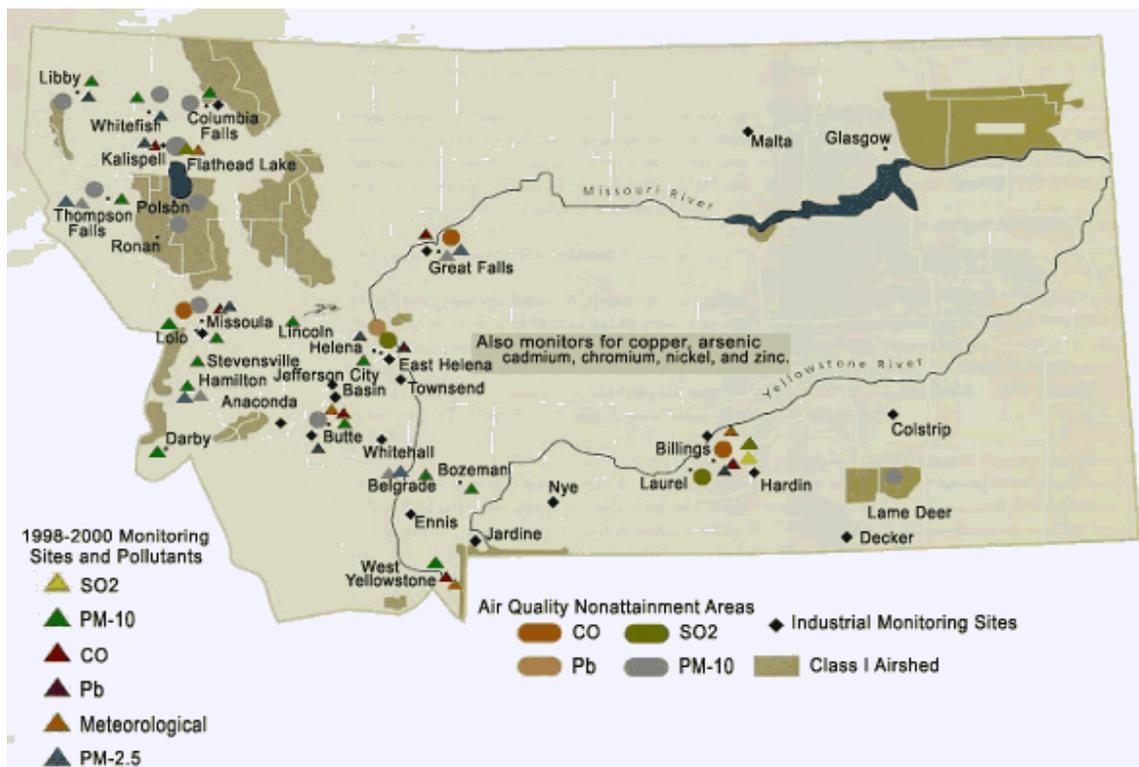
It's definitely been a cool start to September. Looking at the temperature records at Glasgow, this is the first time we've gone through the first eight days of the month without reaching 70 degrees for a high temperature! The average temperature for the 1st through the 8th was 51.4 degrees, which is 10.8 degrees below normal.

NOAA News:

Localized pollution may play role in future climate change: A report released this week by the US Climate Change Science Program states that short term pollutants such as soot, low altitude ozone and other particulates actually do have climate impacts, some with cooling impacts and others with warming impacts. The table to the left shows the various types of gases and particles and their effects. To read more about this study, go to: http://www.noaanews.noaa.gov/stories2008/20080904_pollution.html

Lifetimes of important long-lived gases and short-lived gases and particles in the atmosphere and their effect on climate.		
Gases and Particles	Average Lifetime	Effect on Climate
Long-lived gases		
Carbon Dioxide	more than 100 years	↑
Methane	10 years	↑
Nitrous Oxide	120 years	↑
Short-lived gases and particles		
Tropospheric Ozone	days to weeks	↑
Black Carbon	1 week	↑
Organic Carbon	1 week	↓
Dust	days	↓
Nitrate	1 week	↓
Sulfate	1 week	↓
Warming ↑ Cooling ↓		

Air Pollution and Montana: The State of Montana Dept. of Environmental Quality (DEQ) is responsible for monitoring the quality of air in the state. The majority of air pollution issues in Montana occur in the winter months in the mountain valleys in the western half of the state. For that reason, all the air quality monitoring stations are located from Billings to Great Falls westward. Depending on the location (see map below), they measure different types of pollution, such as PM 10, PM 2.5, Carbon Monoxide, Lead and Sulfur Dioxide. PM 10 and PM 2.5 refer to particulate matter (dust) with sizes of 10 microns or 2.5 microns or smaller. More information is available at: <http://www.deq.mt.gov/AirQuality/AQinfo.asp> And, the Citizens Guide to Air Quality in Montana is available at: <http://www.deq.state.mt.us/AirMonitoring/citguide/contents.asp>



Other Tidbits:

Cattle and Deer are magnetically aligned to the poles: As I was driving to work this week, I heard an interesting tidbit on Paul Harvey that said the National Academies of Sciences had done a study that showed cattle and some deer align their heads so they are pointing to the magnetic north pole. They were able to determine this not just from observing them, but also by utilizing Google Earth satellite imagery. It's not something I've ever noticed before, but you can bet I'll be looking for that as I travel around the region.

<http://www.pnas.org/content/early/2008/08/22/0803650105.abstract>

Weather and Climate Outreach Materials: The National Center for Atmospheric Research (NCAR) has an amazing research facility in Boulder, CO. They also have a science store in the facility, and online. I mentioned it to some of the teachers at the N.E.A.T. program, and thought that you may like to know they have an online science store with cool gadgets, toys and posters. If you have a budding meteorologist in your home, or a teacher who's always looking for new material, they can visit: <http://www.ucar.edu/sciencestore/catalog.htm>

