Websites for Weather

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If you use your web browser to search for the word "weather," you will find hundreds of sites listed. So the few sites I've chosen for discussion in this article will just get you started. There are many additional links to follow from these sites, and I encourage you to keep on weather surfin' and have fun!

I've divided my suggested sites into three groups. The first group called "Outlooks and Past Information," includes sites that cover time scales that are one week or longer into the future or the past. The second group I have labelled "Forecasts," and these sites cover just a few days into the future. Finally, I'll suggest a beautifully illustrated "Learning Site" if weather turns you on and you would like to know more about how it works!

Outlooks and Past Information

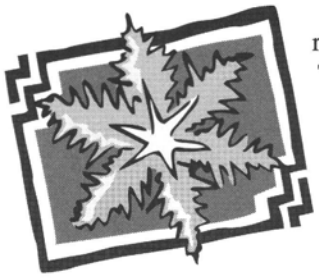
Start by browsing www.cmc.ec.gc.ca.

1. Click on **Forecasts: Charts and Bulletins**, then scroll down the next page to near the bottom of the page, and click on **Monthly**. Here you will find a map of the forecast temperatures for the next 30 days (updated on the 1st and 15th of the month). The map is divided into three categories: Above Normal, Near Normal, and Below Normal. The interpretation of these categories is as follows.

The past data from the same month over each of the past 30 years is divided into three groups; the warmest one-third, the middle one-third, and the coolest one-third. If the forecast map says "Above Normal," it means the temperatures are expected to be like one of the past years in the warmest one-third. Or said another way, forecast temperatures are expected to be warmer than any of the past years that landed in the middle one-third. Similarly, a "Near Normal" forecast means temperatures are expected to be like the middle one-third of past years, or a "Below Normal" forecast suggests an upcoming month like one of the previous coolest one-third. In item 2, below, I'll show you where to get an idea of what temperatures actually occurred in the warmest, middle and coolest thirds in the past.

2. Go back to the bottom of the previous page (click the Back button of your browser) and click on **Seasonal** instead of Monthly. This will open a page that gives you the option of a **Temperature Anomaly** map or a **Precipitation Anomaly** map. These maps are divided into three equal categories of "Above," "Normal" and "Below" corresponding to the warmest or wettest, middle, and coolest or driest thirds of about the past 30 years, just as for the monthly temperature forecast described above in item 1. You can look at the current seasonal forecast, or forecasts for future seasons.

To get an idea of what the past temperature or precipitation values looked like in the top, middle and lower thirds, go to www.msc-smc.ec.gc.ca/ccrm/bulletin/archive.htm. This site will lead us to the seasonal temperatures and precipitation values over about the last 50 years in



ranked order. These lists don't quite match the 30 year periods that the upper, middle and lower thirds are based on and they are for Canada as a whole, but if you break this list into thirds (groups of 18 years) you will get a good idea of what Above, Normal, and Below mean. Once you get to the archive site, do the following:

• in the table, click on the most recent past season of interest (e.g. Winter 1999/2000) if you are interested in winter season data.
• in the first paragraph on the page that comes up, click on **winter temperature departure tables**.
• below the new table that appears, click on **Full Period**. Now you will see the ranked data for the past 53 years.

3. Interested in **Climate Normals**? For a list of stations and what weather variables are observed, go to: www.cmc.ec.gc.ca/climate/normals/eprovndx.htm. Click on the province of interest. Click on the new page, then click on the station of interest.

Weather Forecasts

Here we start by going to the most popular Environment Canada site: weather.ec.gc.ca.

4. When you arrive at the home page for the weather site, click on **Current Conditions and Local Forecasts**. Then on the next page, click on your province of choice and a list of cities will appear. Click on your city of choice. This will get you to weather forecasts that go out to the 5th day into the future and are frequently updated.

5. Go back to the home page for the weather site and you can get a quick overview of the weather at the other places in Canada by clicking on the **National Forecast Map**. This map shows the major pressure systems and fronts (borders between mild/warm, cool/cold air masses). Maps like this are used by meteorologists to prepare the forecasts seen in item 4 above, and you can look to the west of your location on this map to see what might be coming down the pipe in the next few days.

6. Return again to the home page for the weather site and click on **Canadian Radar** (or **RADAR images** at the bottom left of the page). Here you find you can choose various regions across Canada, and within each region you can choose a **composite image of all stations** or the individual station that suits your location best. This will give you a recent still image of precipitation in the region and allows you to spot whether a band of precipitation is about to arrive or depart your location. It's usually helpful to view the radar image with the map from item 5 in mind because the precipitation is often associated with low pressure regions or weather fronts.

7. Back to the home page and click on **Satellite Imagery**. Again you can choose your region of interest, and you can choose **10.70 micros** or **Visible**. The 10.70 micron image is taken with a camera that "sees" heat radiation (infra-red radiation) of much longer wavelengths than we can detect with our eyes. There is a scale along the left hand side of an image that shows colours corresponding to the temperatures at various places across the image (be alert – the colours may be reversed, so blue is warmer than red). Cloud tops will be cooler than the ground, so this image lets us spot areas of cloud during day or night. The visible image will show cloud during the daytime only, of course. At night the visible image will just be black.

The satellite page also allows you to download **animations** which play the last 48 images in a loop. This is a great way to see the progress of weather systems across the country.

Let's now leave the Environment Canada site and go to the mother lode of weather information sites.

8. Who knows why someone at the city of Sarnia would set this up, but go to: www.sarnia.com/weather.

Clicking on the various entries in the tables on this page will take you to a smorgasbord of weather information, including some of the sites we have already visited above. A couple of my favorites are:

• click on **Radar** (second item, second row). I like the "loops" that are listed in the left hand column of the radar table that come up. These allow you to see the progress of areas and lines of precipitation and plan short term activities accordingly. Just scroll past the commercials at the top of the page that comes up, wait a bit until all the images load, and then the loop will start to play.
• go back to the Sarnia weather home page and click on **Satellite**, then try the **USA Sat loop** (last entry, top row) to see another version of an animated satellite series.

There is lots and lots more weather stuff to explore at this site!

Learning Site

If cruising the Sarnia weather site wets your appetite to learn more about how the weather works, ww2010.atmos.uiuc.edu. is a beautifully illustrated site to visit.

9. Click on **Online Guides** along the left hand side of this home page and you'll arrive at a menu of learning modules that includes Meteorology, Remote Sensing from Satellites, Interpretation of Weather Maps, and Projects (for spouses who are teachers or science fairs for your kids).

10. Click on **Current Weather** on the left side of the home page, then try **Surface Products**. This leads to a page with many choices of beautifully illustrated surface weather maps. I like the **Sea Level Pressure with Temperature** and **Sea Level Pressure with I-R Satellite** maps that combine the pressure pattern with the temperature and cloud patterns. Or you can click on **Satellite** from the Current Weather page and see a variety of satellite images. The surface and satellite images can be animated by clicking the **Animate**, then **Play** buttons at the bottom of the image that comes up.

These pages have suggested only a few of the many, many weather-related sites that are on the internet. From these sites (especially the Sarnia weather site) there are lots of links to explore. Mark Twain once said, "If you don't like the weather, just wait awhile." Now all you have to do is left-click!

If you discover some exciting new weather site, or new uses for the weather information you find, I'd be delighted to hear from you. Send me a message at tgillesp@lrs.uoguelph.ca. Happy weather surfin'! ♦