

## Improvements to Seasonal Forecast 2.0

As of April 2026, we have improved the way we produce the CWFIS seasonal forecast. The maps and methods now use newer climate products, producing a more reliable forecast.

### Here's what's new:

#### 1. Upgraded weather inputs

The old system used forecasted monthly values of temperature and precipitation but didn't provide forecasts for the other weather inputs required by the **FWI system**<sup>1</sup>. Instead, it used monthly forecast outputs from the Canadian Seasonal to Interannual Prediction System (**CanSIPsv3**)<sup>2</sup> and historical weather station data to approximate the required daily inputs.

However, CanSIPS provides all the weather information needed for FWI calculations at a much higher temporal resolution (outputs are provided for 6-hour timeframes). The new system takes advantage of this higher temporal resolution, eliminating the need to extrapolate from historical data.

#### 2. Improved spatial coverage

The old system relied on weather station data, calculating forecast values at each station and then estimating values between points across Canada using **interpolation**<sup>3</sup>.

CanSIPS provides global gridded weather data. We now directly calculate FWI at each of these grid points across all of North America (interactive maps are available only for Canada). This gives more robust coverage, even in areas far from weather stations.

#### 3. Better understanding of uncertainty

CanSIPS uses many forecast runs, called an ensemble, to estimate future climate conditions. Since the forecasts are now all generated from this approach, we can capture a more realistic range of possible outcomes. This allows us to evaluate the probability of above- or below-average fire weather conditions, startup timing, and potential extreme events.

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<sup>1</sup> Fire Weather Index. <https://natural-resources.canada.ca/forest-forestry/wildland-fires/canada-fire-weather-index-system>

<sup>2</sup> Canadian Seasonal to Interannual Prediction System. [https://eccc-msc.github.io/open-data/msc-data/nwp\\_cansips/changelog\\_cansips\\_en/](https://eccc-msc.github.io/open-data/msc-data/nwp_cansips/changelog_cansips_en/)

<sup>3</sup> **Interpolation** is a mathematical technique for estimating unknown values using data observed at other locations

One consequence of this change, however, is that forecast runs may disagree for a given month. We have added the Probabilistic Forecast product to characterize how much the runs agree, providing an estimate of forecast certainty.

#### 4. New map products

The new seasonal forecast includes upgraded versions of existing maps, along with two new map layers:

- **Forecast Severity Rating:** reflects the intensity of fire weather conditions expected during the month.
- **Forecast Severity Anomaly:** compares the Forecast Severity Rating to what is expected for a location at that time of year. High values combined with an above- or well-above-average anomaly signals greater concern.
- **Probabilistic Forecast:** shows confidence. Dark colours indicate strong agreement among forecasts of above- or below-average conditions. White indicates low certainty or average conditions.
- **95th Percentile Fire Weather Days:** identifies periods when fire weather may be especially intense, based on days when the Fire Weather Index (FWI) exceeds the local 95th percentile. It is important to note that this product only highlights where the FWI would be much higher than normal and does not capture all days of possible extreme fire behaviour.

Each map provides different information on the forecast. When used together, they help give an overall picture of potential fire conditions.

#### 5. Monthly update timing

We will now update the seasonal forecast on **the first business day after the 6th of each month** during the fire season (April-September). This schedule allows us to use the most accurate data for starting up the FWI calculation. The CWFIS map viewer will display four months of forecasts for each map product.

#### Want to learn more?

You can read the [technical overview](#), view the [current forecast maps](#), or download the forecast data from our [data catalogue](#).