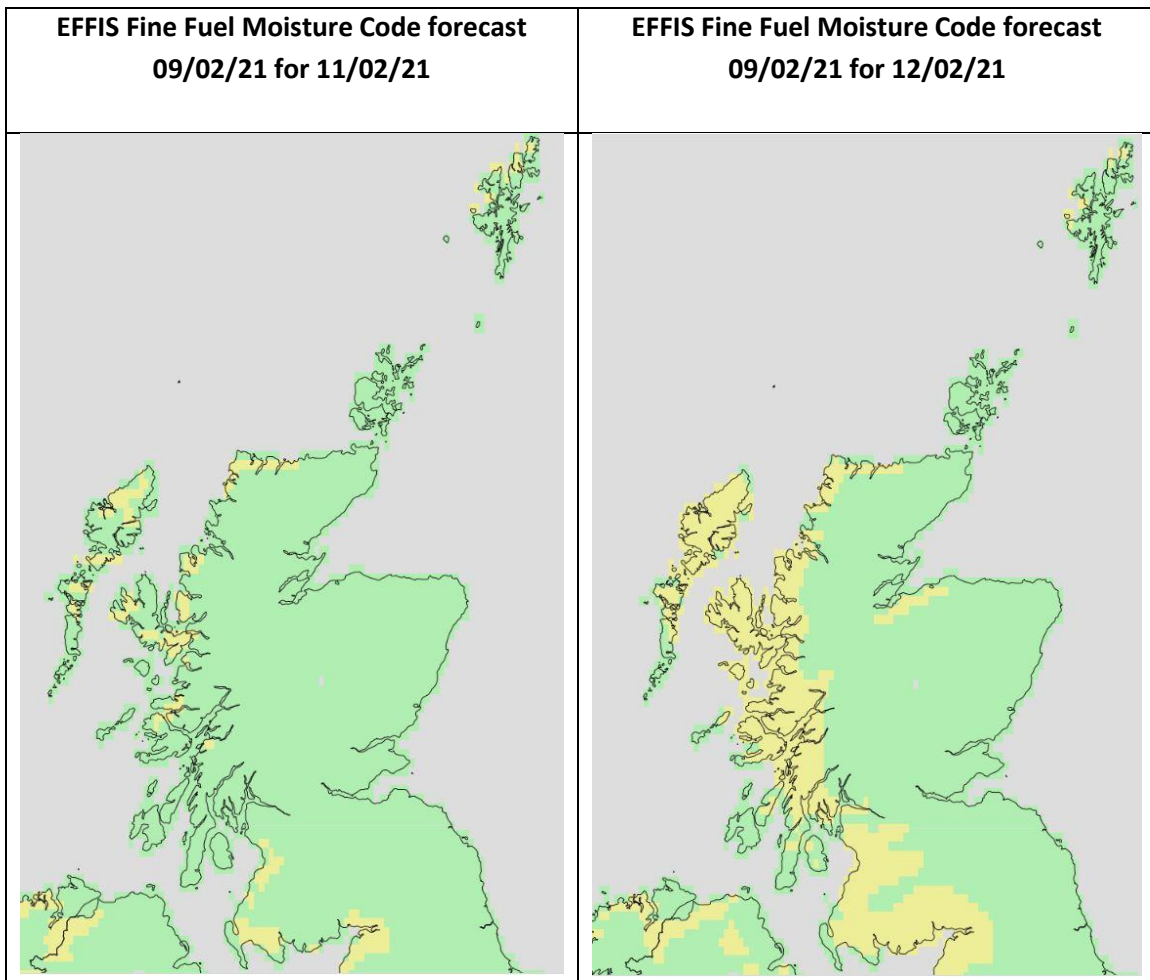


Wildfire Danger Assessment for Thursday 11th – Friday 12th February 2021 for Scotland.

The overall fire danger assessment is:

- **West Coastal area Scotland EXTREME Thursday 11th – Friday 12th February 2021**

Ignition Potential - Fine Fuel Moisture Code:

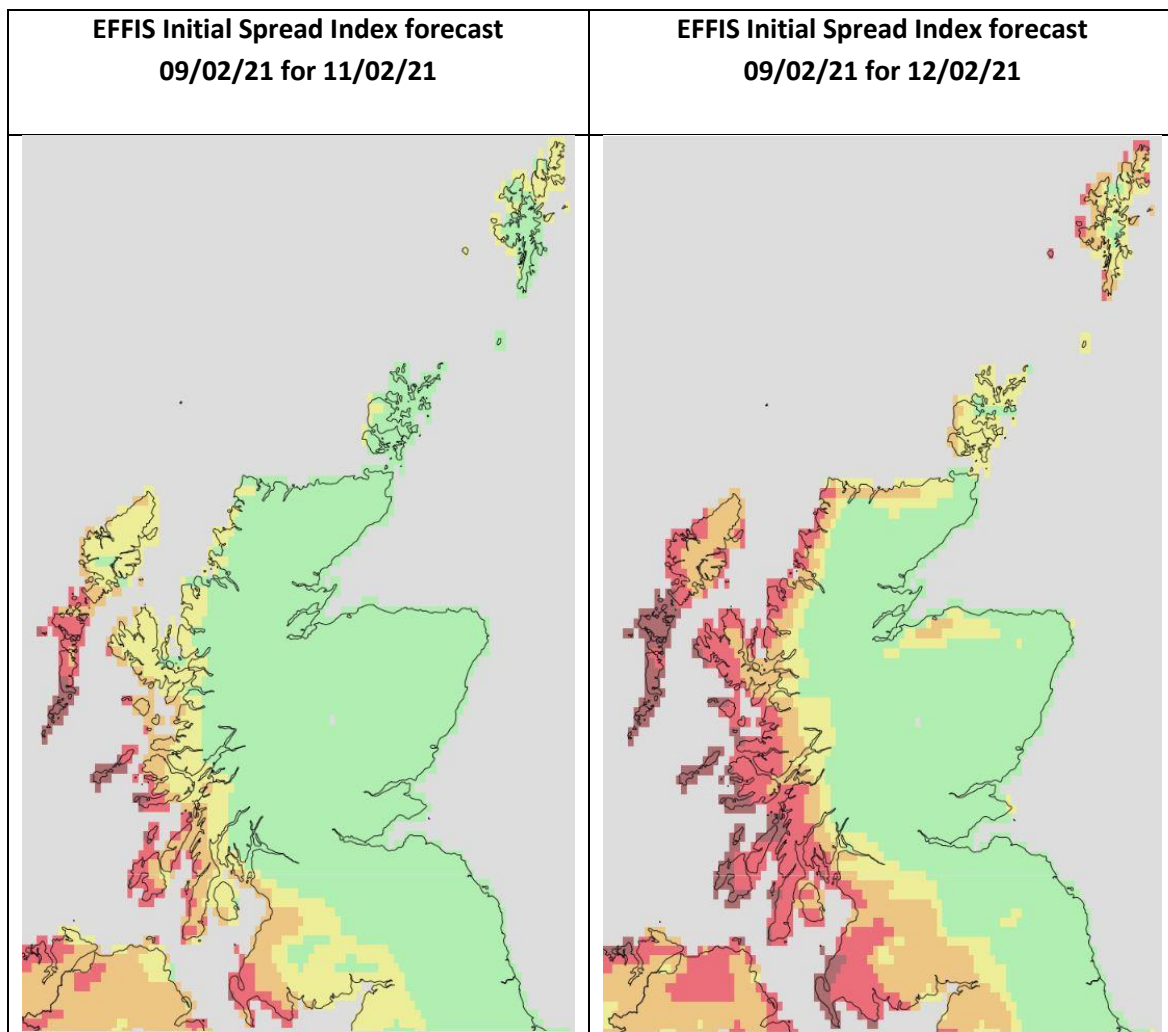


FFMC key for Scotland:

Green – Low / Moderate / High

Yellow – Very High

Brown/Red/Black - Extreme



ISI key for Scotland:

Green – Low / Moderate / High

Yellow – Very High

Brown/Red/Black - Extreme

Seasonal condition of the fuels:

Early February - at this time of year, winter, the seasonal condition of the fuels (vegetation) will be reacting most to the combination of frost, low relative humidity, sunshine and wind. There is a lot of dead grass and dead heather left over from last year, which can dry very quickly. Frost and sun can also reduce the live fuel moisture of heather. Overall these conditions can create very low moisture contents.

There has been a lot of snow over the last few weeks in the East and Central areas but there is no snow in the more Western coastal areas. Fuel conditions are very different East to West.

General weather forecast information:

The weather pattern is currently dominated by a high-pressure area over Norway with cold easterly winds across Scotland. A lot of snow is falling in eastern and central areas but this stops falling before the Western coastal fringe. A low-pressure system develops in the mid-Atlantic later in the week but does not reach the West until sometime over the weekend. In Western coastal areas the easterly wind speed builds from 16 km/hour mid-day Thursday to 38 km/hour mid-day on Friday. Air temperatures are in a day / night range of +3°C to -3°C. Humidity levels in Oban are low in the middle of the day and drop to around 53% on Wednesday, 56% on Thursday and 50% on Friday. These are winter drying conditions.

Discussion:

The key issues over the next few days in Western coastal areas are: the lack of snow, sunshine, low humidity and then wind. Dead fine fuels will dry quickly in these conditions

Both FFMC and ISI become high in the Western coastal areas. Where the FFMC is high dead fuels will ignite and burn hot enough to burn fuels such as heather. ISI is above 3 on 11th February and keeps rising to 6 on Friday, so spread rates could be fast. Lower soil layers are still damp, the potential for smouldering is therefore low.

Overall in the West fires could burn and spread, with moderate to high fire intensity, but should not have significant smouldering, where there is no snow. Once rain or snow arrives then fire danger reduces.

Important Notice

Wildfire danger assessments are made on behalf of the Scottish Wildfire Forum. They are done on a broad area basis. For more local risk assessments the local condition of fuels, recent weather, and weather forecasts, should be taken into account.

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Appendix A: Background information

The EFFIS system is based on the Canadian Fire Weather Index system, of which FFMC, DMC, DC & ISI are a sub-indices. FFMC looks at the dead fuel moisture of the litter layer on the soil surface. The Initial Spread Index (ISI) is FFMC plus a wind function. DMC & DC look are deeper soil moisture indices.

Table 1 EFFIS fire danger class bands:

	VERY LOW	LOW	MOD	HIGH	VERY HIGH
	Green	Yellow	Brown	Red	Black
FFMC	< 82.7	82.7 - 86.1	86.1 - 89.2	89.2 - 93	>= 93
DMC	< 15.7	15.7 - 27.9	27.9 - 53.1	53.1 - 140.7	>= 140.7
DC	< 256.1	256.1 - 334.1	334.1 - 450.6	450.6 - 749.4	>= 749.4
ISI	< 3.2	3.2 - 5	5 - 7.5	7.5 - 13.4	>= 13.4

EFFIS fire danger classes were originally created to support decision making in Mediterranean areas. The equivalent fire danger with typical grass and shrub fuel types in the British Isles is significantly lower. European Forest Fire Information Service (EFFIS) can be viewed at:

http://effis.jrc.ec.europa.eu/static/effis_current_situation/index.html

The weather data that is used in the EFFIS Fire Weather Index model is from the European Centre for Medium Range Forecasts (ECMWF).

In Scotland and the UK the scientific evidence indicates that significant numbers of wildfires often occur when FFMC is above 80 and ISI above 2. Any yellow area on the map indicates an FFMC of more than 83. ISI which is FFMC plus a function for wind, when shown in yellow indicates values between 3.2 – 5 i.e. above the threshold value of 2.

The Scottish Government have commissioned research to support a Scottish Fire Danger Rating System, for information see <https://www.hutton.ac.uk/research/projects/scottish-fire-danger-rating-system-sfdrs>