



Circular 4 of 2016

Forest Service Fire Danger Rating System (FDRS) 2016

Forest Fire Danger Ratings are issued as circulars during the main wildfire risk season from February through to September. These warnings provide forest owners and managers with advance warning of high fire risk weather conditions, and permit appropriate readiness measures to be taken in advance of fire outbreaks.

Forest Fire Danger Ratings are generally based on daily Met Eireann Fire Weather Index (FWI) and European Forest Fire Information System (EFFIS) outputs, with additional processing and daily risk analysis by the Forest Service. Like other forms of weather warnings they are colour coded. Increasing levels of preparation and vigilance are required as the risk levels scale from Green through to Red.

Like all forms of forecasting, wildfire risk warnings are indicative, and conditions on the ground at local level may differ significantly from those forecasted. The Department of Agriculture, Food and The Marine will not be liable for loss or damages arising from the issue or omission of Wildfire Risk Warnings.

To minimise exposure to risk from wildfire, all forest owners and managers should carry out hazard/risk assessments for their properties, and take adequate measures to protect and exclude fire from their properties during the different risk condition levels. Such measures may include the installation of firebreaks, or the removal of dangerous vegetation in proximity to property and critical assets, and extend to the undertaking of fire patrols and pre-positioning of fire suppression resources by property managers.

Fire Danger Rating Systems

A number of Fire Danger Rating systems are publicly available at European and local levels, including the Met Eireann Fire Weather Index <http://www.teagasc.ie/forestry/index.asp> and EFFIS the European Forest Fire Information System <http://forest.jrc.ec.europa.eu/effis/applications/current-situation/>. These systems are based on the well-established Canadian Fire Weather Index system (FWI). It is important to note that under Irish Conditions, due to the nature of the modelling involved, fire danger bands are set quite high for our fuel types and as such FWI outputs generally under-rate risk under Irish conditions. The **Fine Fuel Moisture Code** Component (FFMC) of the FWI has been found by experience to have the strongest correlation with actual fire risk in Irish vegetation.

As FFMC level increases, there is a corresponding increase in fuel ignition potential and consequent fire behaviour, intensity, and spread rates. These basic fire risk conditions will be further compounded by presence of wind and topographical factors. Accordingly, the prevailing Forest Fire Danger Rating can be used to inform fire suppression tactics and resource allocation to incidents, particularly the advance notification, positioning and deployment of aerial fire fighting resources and other specialist means.

BE PREPARED. BE VIGILANT. STAMP OUT FOREST FIRES



Fire Danger Ratings are presented in four categories:

1. Condition Green – Low Fire Risk Conditions

FFMC Range 0-50



Condition Green indicates that fire danger status is favourable, and where vegetation can be ignited, there is a low rate of fire spread and wildfire risk. Condition Green is a favoured status for prescribed burning operations, especially protective burning near forestry and other property. Ideally, hazardous vegetation in proximity to assets should be removed/ treated under these conditions. Risk assessments, Fire Plans and relevant contact lists should be developed for all plantations prior to the onset of higher risk conditions.

2. Condition Yellow – Moderate Hazard Alert. Be Aware.

FFMC RANGE 51-70



Condition Yellow is the default condition during the main wildfire risk period from March to September. Forest managers and owners, and people concerned with farming and upland management should be aware of the inherent fire risk during this period.

Under Condition Yellow risk conditions upland vegetation can be expected to burn steadily, with a moderate flame length and predictable rate of spread, however wind conditions and other factors can cause this to change. Fire plans should be completed and relevant contact lists, aviation support contracts etc., updated prior to this point.

It is implicit that Yellow Condition indicates hazard conditions that do not pose an immediate threat to the general population, but only to those exposed to risk by nature of the location of vulnerable assets, and/or risk profile of their activity e.g. traditional burning. However, rural residents should also be aware of the risks posed to property and human safety by wildfire, and take action to reduce and remove hazardous vegetation in proximity to homes, fuel storage areas, and other vulnerable assets.



3. Condition Orange – High Fire Risk. Be Prepared.



FFMC RANGE 71-80

Condition Orange will generally derive from extended periods of low precipitation, moderate relative humidity and low to moderate wind conditions which have the capacity to significantly increase the risk of wildfire initiation and spread. 'Type B' Spring Westerly Atlantic high pressure systems and accompanying calm conditions or light Westerly/South Westerly winds regularly give rise to these conditions, and create a steady but moderate drying environment for fine fuels such as grasses and heather, particularly where vegetation is dead following the winter months.

Orange level warnings may also derive from expected patterns of human activity that effect existing fire risk such as expected traditional burning patterns by landowners or other factors such as bank holiday weekends, school holidays etc that may precipitate high levels of recreational visitors onto risk lands.

The issue of a Condition Orange warning implies that all recipients in affected areas should prepare for outbreaks of fire. Forest managers, landowners and rural residents should be satisfied that firebreaks are in good condition and that access routes and forest road networks are clear and fit for purpose. Where available, fire suppression personnel and forest managers should be notified and instructed to prepare for the likelihood of fire occurrence. Suitable maps, contact lists, fire plans, and equipment and relevant PPE should be checked and made ready.

Fire patrols may be warranted under such circumstances in known fire hotspots.

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4. Condition Red – Extreme Fire Risk. Take Immediate Action.



FFMC >80

Under extreme Fire Risk Conditions any ignition source in hazardous fuels will give rise to rapid and unpredictable wildfire development and spread. Under these conditions, in upland situations fire can be expected to cover extensive areas and pose extreme difficulties to suppression efforts and will likely give rise to Major Emergency Management (MEMs) response scenarios.

Typically, extreme conditions derive from 'Type A' Northern European High Pressure Systems, where air circulates in a clockwise direction over the Northern European and Central European land masses. This circulation across the land mass causes the air to shed moisture and become very dry, which in turn dries out vegetation on the ground very rapidly inducing high levels of combustibility, particularly in fine fuels. Where the edges of these Easterly systems rest over UK/Ireland such cold dry air will be accompanied by strong and often cold very low humidity winds from the South East or North East that will support further drying and rapid fire propagation and spread to produce high intensity fire events, that can be further exacerbated where fuels and topography permit.

The issue of Condition Red Extreme Fire Danger Ratings should be a comparatively rare event and implies that recipients should take immediate action to protect resources and property. Such action may involve the mobilisation, assembly and repositioning of resources such as water tankers, machinery, personnel and contract aviation support in high risk areas. Notification of likely Civil Protection risks to relevant Local Authorities may also be warranted under such circumstances.

Preliminary notification of Defence Forces Aid to Civil Power/ Aid to Civil Authority requests by relevant authorities may also be warranted where extreme conditions are deemed likely to exist, and where emergency response requirements are likely to exceed the capabilities of civil agencies.

Under such conditions forest owners/managers, other land managers, landowners and local authorities should implement fire patrols to exclude all fire activity from the landscape and enforce relevant fire protection legislation.

Rural residents should also implement a high degree of vigilance regarding fire outbreaks, and report all illegal fire activity immediately to authorities. It is important to check on elderly or other vulnerable neighbours who may be affected or concerned about fire. Where possible, assist with preparation and reassurance of vulnerable neighbours, including evacuation if this is deemed necessary by the Local Authorities, and co-operate fully with relevant Civil Protection agencies in this regard.

Further information on Fire management and wildfire protection is available at
www.agriculture.ie/forests-service/firemanagement

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