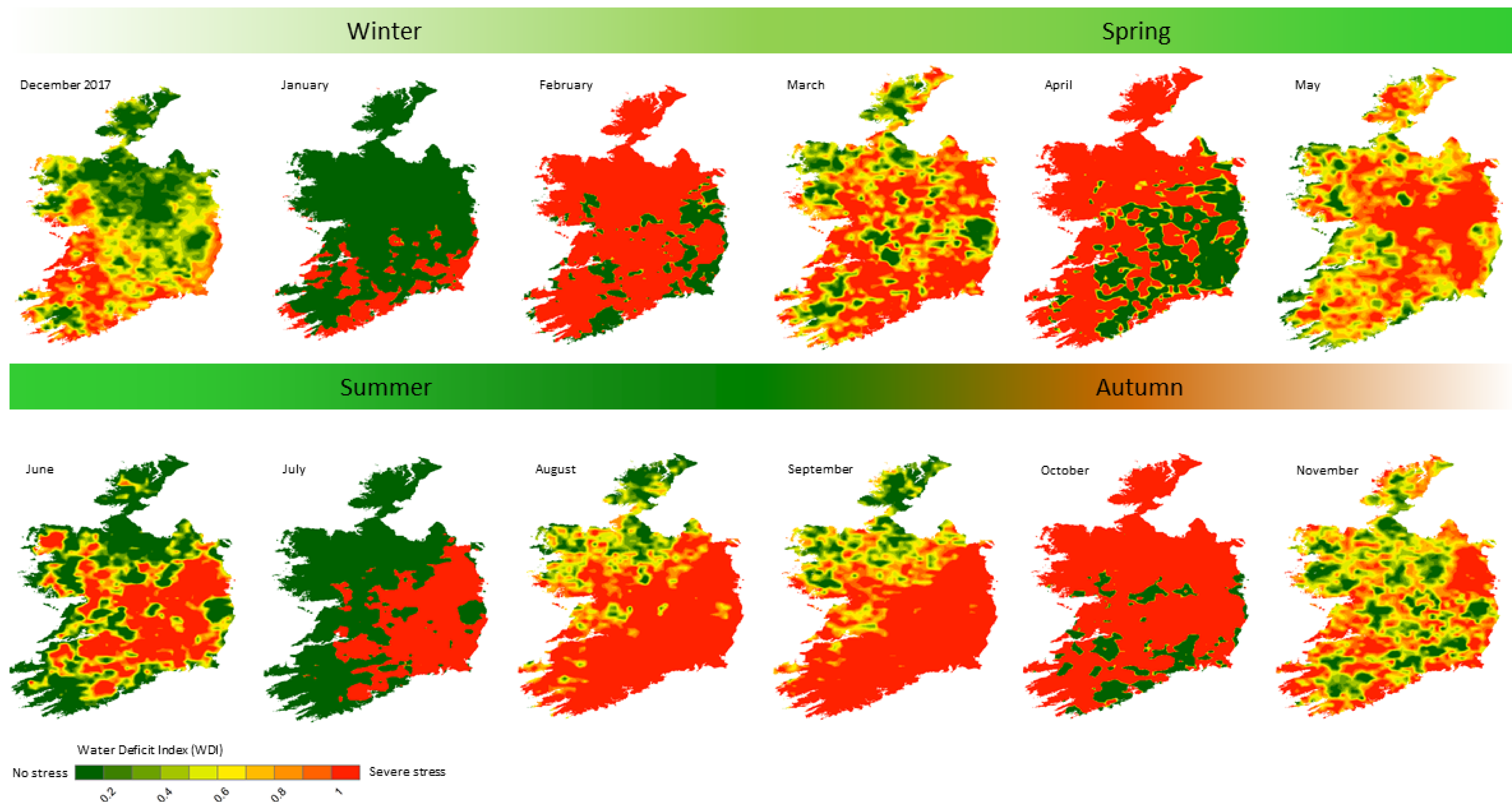


Seasonal crop water status in the Republic of Ireland in 2018



In 2018 agricultural productivity in Ireland was severely impacted by extreme weather that resulted in crop water stress and failure. Radiometric images can be used to quantitatively understand the spatial extent of water deficit. The Water Deficit Index (WDI), used to quantify per-pixel seasonal distribution of crop water stress, was estimated by relating monthly MODIS thermal (MOD11B3) and visible (MOD13A3 and MCD19A3) images for the period between December 2017 and November. The WDI ranged from 0 to 1, indicating no water stress to maximum crop water stress, respectively. The early period of winter shows moderate to severe water deficits in the west and south-west ($WDI > 0.5$) and no water stress in the north. In late winter, the entire country severe water deficits which prolonged till the end of spring. We further observe the peak WDI retracting to the east and south in summer and autumn of 2018. Due to the prolonged wet winter, the actual evapotranspiration greatly exceeded the potential evapotranspiration leading to severe water deficit in spring, and consequently to poor crop performance.

Projection: Irish Transverse Mercator