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Mapping peatland disturbance in Ireland

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In this research we mapped the extent of disturbance on Irish peatlands using an object oriented approach and medium and high-resolution imagery. Peatlands in Ireland contain between 53-62% of SOC on 20% of the Ireland's land area. These peatlands have been extensively disturbed by drainage and converted to agriculture, forestry and industrial or domestic extraction. Previous studies concluded that over 85% are disturbed. The medium resolution imagery (IRS) data dates from; 2005 to 2007 and most of the high resolution data (Ikonos/Geoeye) are more recent; from 2009 to 2010. The peatland extent was delineated using the Derived Irish Peat Map version 2 (DIPM2). A disturbance cube was used to determine the severity of disturbance. The object oriented approach uses the Feature Analyst extension in ArcGIS. Feature Analyst is a black box system.

Some difficulties were recorded in cutover areas where there is a spatially complex and heterogeneous mosaic of vegetation communities. However the overall accuracy assessment was good for the medium resolution imagery ranging from 72 to 73%. However, the use of high resolution imagery increased the overall accuracy of the disturbance maps to between 85 and 90%.