



Using Landsat time series for attributing forest disturbance dynamics in Sumava National Park, Czech Republic

Theodora Lendzioch (1), Jakub Langhammer (1), and Ivan Barton (2)

(1) Charles University, Department of Physical Geography and Geoecology, Faculty of Science, Prague, Czech Republic, (2) University of Sopron, Department of Surveying and Remote Sensing, Institute of Geomatics and Civil Engineering, Faculty of Forestry, Sopron, Hungary

Remote Sensing is a key information source for improving the spatiotemporal understanding of forest disturbance dynamics. So far, the characterization of forest dynamics remains challenging, particularly in areas where a number of interacting disturbance agents coincidentally affect forest development. Previous studies have used spectral-temporal metrics derived from Landsat time series to identify disturbance agents. Here, we enhance this approach by creating a disturbance history map derived from Landsat 30 years time series over the Sumava National Park, Czech Republic, based on two approaches. The tested approaches are: 1) a fully unsupervised automatic classification based on vegetation indices and 2) an object-based classification (OBIA) of vegetation using multispectral data. Such approaches allow to create a thematic layer of trajectories showing forest disturbance events in the past with smoothing long-term forest dynamic trends. The results were validated in terms of ground truth data and thus compared against to each other. Our results demonstrate the strength and weakness of the two applied methods.