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Novel drone-based system for ecosystem monitoring – application, analysis and interpretation

Maik Veste (1), Ralph Dominik (1), Marin Dimitrov (1), Anton Fischer (2), Werner Gerwin (1), Wolfgang Schaaf (3)

(1) Research Centre for Landscape Development and Mining Landscapes, Brandenburg University of Technology Cottbus, Germany,

(2) Geobotany, Dept. of Ecology and Ecosystem Management, Munich University of technology Technical University München,

(3) Soil Protection and Recultivation, Brandenburg University of Technology Cottbus, Germany

The complex interactions between structures and processes of an initial ecosystem system development are rarely possible to study under natural environments. Therefore, an artificial water catchment at Welzow South (Lausatia, Germany) was established in 2005 and left to an undirected succession that allows the integrated analysis of all results on a landscape scale. A novel mini-drone system is used for monitoring the vegetation pattern and surface structures. An integrated waypoint-GPS system allows the shooting of exactly repeatable air photos. The drone is equipped with a 10 Mpixel digital camera. Depending from the flight height resolutions of less than 1cm/pixel are possible. Vegetation patterns were analysed with MultiSpec and integrated in the ArcGIS system. Further applications of the mini-drone system for ecosystem monitoring is discussed.

Further informations: http://www.tu-cottbus.de/sfb_trr/

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Figure 1: Application of a micro-drone (left) for monitoring of ecosystem structures and vegetation on an artificial watershed Hühnerwasser (Lausatia, Germany).