Special Issue

Monitoring and Modelling of Soil Properties in Forest Ecosystems

Message from the Guest Editor

Soil monitoring and modelling are related approaches toward ecosystem development study and subsequently to predictions of response on recent global change (GC). The natural processes of soil development preserved in forests are an irreplaceable advantage in modelling the effectiveness of landscape restoration practices. Forest soil development provides data for predicting plant community productivity, ecosystem stability or the potential natural vegetation form. However, a sufficiently probable estimation of soil development depends on detailed data collection at regular intervals from a representative set of plant communities. Soil properties monitoring offers frameworks to observe forest ecosystem development using nutrient balances in the vertical direction and erosion–sedimentation processes in the horizontal direction. Soil nutrient balances indicate changes in fertility due to enrichment or loss, whereas erosion–sedimentation processes indicate transitions downslope. Because of the dependence on time and space, information on soil development is desirable for estimating the adaptive capacity of forests to GC.

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