



Uncertainties and Solutions Related to Use of WRB (2007) in the Boreo-nemoral zone, Case of Latvia

Raimonds Kasparinskis (1), Olgerts Nikodemus (2), and Nauris Rolavs (3)

(1) University of Latvia, Faculty of Geography and Earth Sciences, Riga, Latvia (raimonds.kasparinskis@lu.lv), (2) University of Latvia, Faculty of Geography and Earth Sciences, Riga, Latvia (olgers.nikodemus@lu.lv), (3) University of Latvia, Faculty of Geography and Earth Sciences, Riga, Latvia (nauris.rolavs@gmail.com)

Relatively high diversity of soils groups according to the WRB (2007) classification is observed in forest ecosystems in the boreo-nemoral zone in Latvia. This is due to the geological genesis of area and environmental conditions (Kasparinskis, Nikodemus, 2012), as well as historical land use and management (Nikodemus et al., 2013).

Due to the relatively young soils, Albic, Spodic and Cambic horizons are relatively weakly expressed in many cases. Relatively well developed Albic horizons occur in sandy forest soils, but unusually well expressed Spodic features are observed. In some cases there is a Cambic horizon, however location of Cambisols in the WRB (2007) soil classification sequence does not provide an opportunity to classify these soils as Cambisols, but they are classified as Arenosols. This sequence does not reflect the logical scheme of soil development, and therefore raises the question about location of Podzols, Arenosols and Cambisols in the sequence of WRB (2007) soil classification.

Soils with two parent materials (abrupt textural change) are relatively common in Latvia, where conceptually on the small scale mapping results in classification as the soil group Planosols, but in many cases there is occurrence of Fluvisols, as parent material in the upper part of the soil profile is formed by Baltic Ice lake sandy sediments – this leads to question about the location of Fluvisols and Planosols in the sequence of the WRB (2007) soil classification.

Soil research has found cases, where a relatively well developed Spodic horizon was established as the result of ground water table depth in areas of abrupt textural change. In this case the profile corresponds to the soil group of Podzols, however in some cases – Gleysols not Planosols due to a high ground water table. Therefore there is a need for discussion also about the location of Podzols and Planosols in the sequence of the WRB (2007) soil classification.

The above mentioned questions raise problems related to unambiguous determination of soil groups. Soil classification must be very precise by reflecting relationships of soil forming processes. In the development of international soil classification it is advisable to pay more attention on ecological processes.

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References:

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