

## **The evolution of sandy soils under the influence of vegetation succession and anthropogenic activities - case study from Błędów Desert**

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Sandy areas are an important source of research about early stages of the soils formation process and their further development. The rate of succession is reflecting the influence of vegetation on chemical and physical properties of soils which as the time goes undergo the evolution process caused by other environmental factors. The Błędów Desert (Poland, Central Europe) is an example of this kind of area, where sandy soils evolved into Podzols, but as a result of human activities conducted since Middle Ages soil cover has been destroyed to bedrock. Currently progressing vegetation succession occurred in two ways: primary, which took place in areas covered by loose sand and secondary, in the areas with fossil soils. Presently the Błędów Desert is a suitable example to study soil changes in both cases mentioned above. The main aim of the study was to present diversity and characteristics of soils in The Błędów Desert in relation to their development stages and vegetation succession. During field studies soil profiles were described and selected for the detailed studies and soils samples were taken for laboratory analysis, including a determination of basic physical and chemical analysis as well as for micromorphological analysis (selected profiles). Podzols located near the boundary of the study area was selected as a reference soils. The results proved the complexity of the soil process formation, which strongly depends on the vegetation succession and human activities including human-induced aeolian processes. Results confirmed the presence of buried soils, which together with the contemporary soils formed a soil sequence. Moreover, research shows that the dominant soil-forming processes at the Błędów Desert are humus accumulation and podzolization. To summarize, The Błędów Desert is a dynamic environment undergoing rapid changes of soil cover under the influence of the interaction of vegetation, anthropopression and aeolian processes.