

## **Soils and landforms of War – Pedological investigations 75 years after World War II**

*Kolja Thestorf & Mohsen Makki*

Seventy-five years after World War II, the legacy of the last war in Germany is still visible in near-natural and anthropogenically shaped urban and rural soils of the Berlin/Brandenburg Metropolitan Area. Shooting ranges, trenches, re-filled bomb craters, and grenade funnels, as well as artificial mountains consisting of war debris, can be identified across the study area. Our study has been carried out in order to show how acts of war directly or indirectly influence the pedosphere of urban and rural areas, and how World War II altered the geomorphology in the study area. Analysis of dozens of soil profiles in the Berlin/Brandenburg Metropolitan Area has been conducted to achieve pedological characteristics of “soils of war”. Pedological and morphological investigations in the study area were carried out to reveal how humankind, by relocating and reworking natural soil material and depositing war debris, substantially altered the urban landscapes within the administrative borders of Berlin as well as in the rural landscapes of Brandenburg. Emphasis was placed on geochemical investigations on shooting ranges and battlefields as they show how acts of war influenced the soil heavy metal content. Since the industrialization, but especially during World War II and its follow-up, humankind became the dominant soil formation factor, particularly in the urban environments of the Berlin/Brandenburg Metropolitan Area. Our research revealed that “soils of war” on anthropogenic landforms (e. g. , shooting ranges from pre-war times and World War II and its aftermath) show distinct soil physical and chemical characteristics as well as pedoturbations. In our studies, we furthermore found out that soils of war often contain elevated amounts of antimony (Sb), copper (Cu), and lead (Pb), which pose a threat to soil-water ecosystems. On the other hand, these ruderal soils are often habitats for endangered species of the red list and can provide ecosystem services.

*Kontakt:*

*Kolja Thestorf: Humboldt-Universität zu Berlin, Geographisches Institut, E-Mail:  
thestoko@hu-berlin.de*