

PRESS RELEASE

Human burials affect the environment for millennia

Vienna/Prague, April 26, 2017 - Researchers from the Faculty of Environmental Sciences, Czech University of Life Sciences Prague (FES CULS), investigate the long-term environmental impact of human remains. The DEEPDEAD project's results show that chemical signals of decomposed bodies can frequently be well distinguished against the natural background values, and persist for centuries to millennia. Not only soil and groundwater is affected by human burial - cremation inevitably contributes to air pollution and depletion of fuels. More people living today than ever in history implies a steadily increasing number of deceased in the future. Clearly, the world needs to consider ecological, environment-friendly forms of burial. Are we ready to embrace this challenge?

Experiments and analyses conducted in the last two years covered a spectrum of burial customs practiced since prehistory to the recent period, namely inhumation, cremation, and through animal proxies also excarnation (exposure of bodies to elements in open air). From an ecological point of view, cemeteries (even abandoned ones) represent landscape patches significantly influenced by the human activity, with necessary impact on soils, groundwater and local biota. The results are being presented at the General Assembly of the European Geosciences Union in Vienna.

Scientists at FES CULS currently address the intriguing problem of human-induced chemical change in sediments and soils affected by human burial. While the decomposition of dead bodies may be seen as a very natural, environment-friendly process, cultural customs of most human societies dictate the establishment of formal mortuary areas where human remains accumulate for decades and centuries. This culturally inspired refusal of random scattering of biological constituents of dead bodies across vast areas may potentially lead to locally high concentrations of certain elements and compounds that contrast with their natural levels. The long-term ecological legacy of places dedicated to intensive burial has so far been little studied. Geoarchaeology is a discipline that is uniquely apt to address this question, collecting evidence from various periods and societies.

This emergent research area produces knowledge that can be utilised in ecology, soil science, and landscape management. A whole range of serious questions must be considered before we make a significant progress in this direction, because deep-seeded religious values, ethical concerns and scientific arguments are not likely to reach a mutual agreement easily.

This work is part of the research project "DEEPDEAD: Artefacts and human bodies in socio-cultural transformations", supported by the Humanities in the European Research Area funding body (grant No. HERA.15.055). The project involves partners from the UK, Austria and Germany (www.deepdead.eu).

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