“Vegetation Processes and Human Impact in a Changing World”

ABSTRACTS

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Unravelling the sand trapping plants (nebkhas) as a potential tool against desertification and biodiversity loss in degraded arid environments

Assaeed Abdulaziz M.¹, El-Bana Magdy I.¹, Al-Rowaily Saud L.¹, Al-Qarawi Abdulaziz A.¹ & Ivan Nijs²

¹Department of Plant Production, College of Food & Agricultural Sciences, King Saud University, P.O. Box 2460, Riyadh, Saudi Arabia
²Department of Biology, Research Group of Plant & Vegetation Ecology, University of Antwerp, Campus Drie Eiken, Universiteitsplein 1, B-2610 Wilrijk, Belgium

Wind erosion is the principal mechanism of desertification in many arid and semi-arid regions of the world. In these regions, several native plant species naturally fix windblown materials in small, stable, phytogenic mounds or ‘nebkhas’, but none of them are currently used to combat desertification. In the coastal and inland arid dunes of Sinai and Saudi Arabia, we screen a variety of such species, not only for sand stabilisation, but also to promote biodiversity by creating habitats for other species, since nebkhas locally improve soil fertility and water status. We explore the potential of a new, natural rehabilitation technique to control the leakage of scarce resources from degraded arid landscapes. We also present evidence that, depending on human impact and landscape, nebkhas can trigger long-term changes in these ecosystems.