ECER 2012

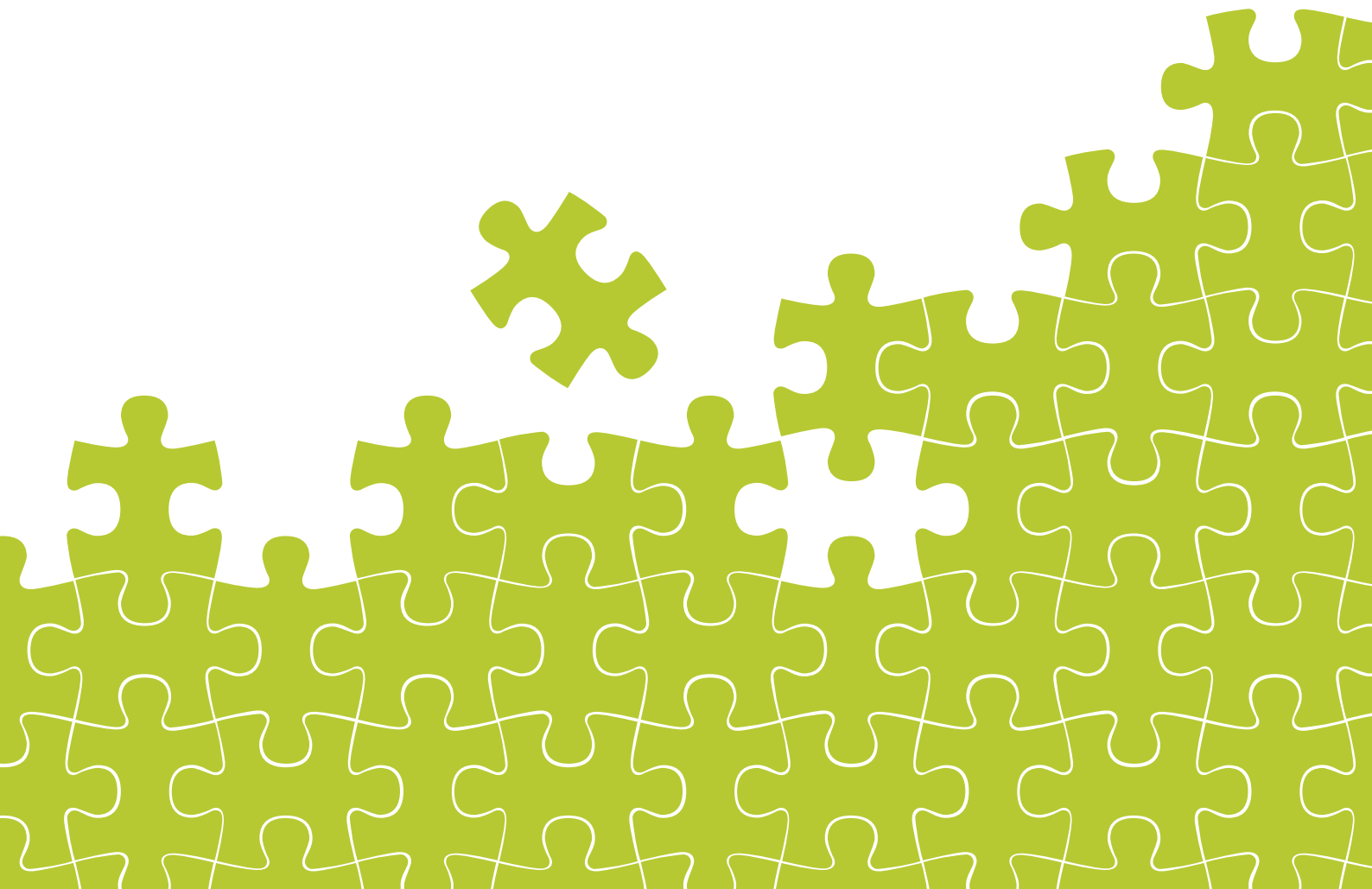
The 8th European Conference on Ecological Restoration

September 9–14, 2012

České Budějovice, Czech Republic

NEAR-NATURAL RESTORATION

Programme and Abstract Book



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CONTENT

	Vajgar	Hejtman	Bezdrev	Rožmberk	Svět	University
15:15 – 16:45	**Special Session 4** **The Maya forest garden, a 'near natural' subsistence system** *Chair: Anabel Ford* Anabel Ford (USA) Connecting Traditional Maya Land Use and Ancient Maya Settlement Patterns David Campbell (USA) The Most Diverse Home Gardens in the World Scott Fedick (USA) The Secret Garden: Assessing the Archaeological Visibility of Ancient Maya Plant Cultivation According to Pollination Syndrome Betty Faust (USA) Why go backwards? Comparing the Maya forest-garden with intensive agricultural systems, ancient and modern, in Pich, Campeche, Mexico	**Special Session 3** **The role of wetland restoration in adapting ecosystems to climate change** *Chair: Anne Tolvanen* Anne Tolvanen (Finland) Sustainability of land-use of peatlands Eva Mosner (Germany) Future prospects for floodplain vegetation under climate change Petra Haslgrubler (Austria) Establishment of semi-natural litter meadows in the Enns valley	**Special Session 6** **Man-made effects and solution for ecological restoration in the marine environments** *Chair: Ehud Spanier* Ehud Spanier (Israel) Invasive species, over exploitation and temperature increase as expressed in the yield of Mediterranean trawl and coastal fisheries – can we restore species assemblages using marine protected area (MPA), artificial reefs and other management tools? Sjaak Swart (Netherlands) Knowledge traditions and governance. Restoration and conservation in the Dutch Wadden Sea Lucia Ferroni (Italy) Near Natural Restoration? A pilot study in the Northern Adriatic coast, Italy Jurate Sendzikaite (Lithuania) Conservation of redlisted plant species of endangered salt meadow communities in Klaipeda Seaport territory (Lithuania)	**Special Session 2** **Guidelines for grassland restoration using native seed mixtures** *Chairs: Kathrin Kieh, Anita Kirmerl* Peter Torok (Hungary) Recovery of grasslands using seed mixtures: Application circumstances, problems and successes Anita Kirmer (Germany) Use of directly harvested seed mixtures in grassland restoration Tobias Donath (Germany) Enhancing plant biodiversity in species-poor grassland – methods, processes and mechanisms Kathrin Kiehl (Germany) Restoration of species-rich field margins and fringe communities by seeding of native seed mixtures Richard Scott (UK) Bringing It all back home: The Parable of the sower	**Special Session 5** **Mining operation and biodiversity protection – practical approaches** *Chair: Michael Rademacher* David Willyams (Australia) Geophyte propagation and sustainable establishment in post-mining restored Jarrah (Eucalyptus marginata) forest, Western Australia Jose-Manuel Nicolau (Spain) Geomorphic reconstruction of surface mining disturbed lands to facilitate their ecological restoration. Examples in the Spanish Iberian Range by using the GeoFluv method Petra Konvalinkova (Czech Republic) Practical examples of restoration and species protection from mined sites in the Czech Republic Lubomir Tichy (Czech Republic) Experimental restoration of species-rich deciduous forest on mining deposits in Mokra limestone quarry Klara Rehounkova (Czech Republic) Restoration of psammophytic grasslands in the sand pits: directed vs. spontaneous succession	CANOCO WORKSHOP (For pre-registered only) 15:00 – 18:00 Petr Smilauer (Czech Republic) Canoco workshop will be held on Tuesday, Sept. 11th, between 15:00 and 18:00 p.m. at the Institute of Molecular Biology of Plants, Czech Academy of Sciences, located in the main complex of the University campus. The computer room, marked Pc4, is located in the first floor of the Institute and the access will be marked by labels CANOCO with arrows from the main entrance and assisted by a volunteer.
	16:45 – 18:00 Poster session					
	17:30 – 18:00 General Membership Meeting of SER-Europe					

At intermediate levels of runoff amount, micro-landforms as alluvial fans and bared soil areas, are generated. Vegetation is adapted to the micro-geomorphology developing a patchy mosaic structure. Seven types of ecohydrological units (classified as runoff sources or sinks) have been identified. A functional interaction between sources and sinks following the TTRP approach has been demonstrated.

When runoff does not develop micro-landforms, natural plant colonization leads to another patchy mosaic structure based on *Genista scorpius*, which can be considered as a natural island of hydrologically enhanced biotic productivity. This species develops a biotic control of the main hydrological processes, playing a key role in the ecosystems succession.

These findings highlight the importance of an "expert management of runoff" if the desired objectives of a reclamation project are to be reached.

Keywords: *ecohydrology; drylands; mining; reclamation; runoff;*

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Geomorphic reconstruction of surface mining disturbed lands to facilitate their ecological restoration. Examples in the Spanish Iberian Range by using the GeoFluv method

J.M. Nicolau[1], J.F. Martin Duque[2], I. Zapico[2], N. Bugosh[3], C. Martin Moreno[2]

[1] *University of Zaragoza, Agricultural and Natural Sciences, Huesca, Spain*
[2] *Complutense University of Madrid, Geodynamics, Madrid, Spain*
[3] *Geofluv, Fort Collins, Colorado, USA*

Failures have been and are too common in spite of the significant development of mining reclamation techniques during the last decades. The most common cause of those failures is the lack of understanding of the long-term geomorphic stability of the reclaimed landforms. In this framework, an increasing number of cases and research initiatives are proving, worldwide, that the use of geomorphic criteria can achieve a truly ecological restoration of lands disturbed by surface mining. This approach goes beyond of what it is called mining reclamation or mining rehabilitation. This is because an adequate topographic design and a proper arrangement of the materials which build the landforms have a critical power over the restitution of decisive ecological processes -mainly dealing with soil and biological functionality. As a result, the provision of new ecosystem services for human well-being at formerly degraded lands by mining is maximized.

Here, we explain several examples of geomorphic designs of quarries in the framework of truthfully ecological restoration initiatives. The quarries are located in two very ecological and hydrological sensitive areas of the Spanish Iberian Range: Somolinos and Upper Tagus (Guadalajara province, East-Central Spain). The designs have been carried out using the GeoFluv method and the Natural Regrade software. For the Somolinos scenario, we provide the details for accomplishing the beginning of the reconstruction -being the first example of such building following the mentioned methodology in Europe- along with the successful erosional behaviour of the reconstructed surface from of July 2011.

Keywords: *Mining; Geofluv; Geomorphology; Reclamation;*

O113

Ecological restoration of beech forests

M. Niklasson[1]

[1] *Nordens Ark Foundation, Aby Sateri, Hunnebostrand, Sweden*

Due to human activity natural old-growth beech forests in NW Europe have become reduced to very small areas. In strong contrast to managed forest, natural beech forest is rich in species associated with old trees, senescent trees and dead wood. Due to fragmentation and trivialisation it is likely that a large extinction debt occurs in remaining old-growth fragments. Thus, there is an imminent need to halt on-going local extinctions to preserve biological diversity in these forests. One way to turn the process back may be active re-creation and restoration of trivial young beech forest into forests with high structural and biological diversity in the vicinity of old-growth stands. However, restoration methods based on principles of forest dynamics and substrate requirements of threatened species are largely lacking. Here I present a new method for active ecological restoration of single-cohort previously managed beech forest into multi-aged structurally rich beech forest. The method involves a protocol for spatio-temporally explicit artificial gap formation and the active creation of tree features and wood substrates of high variety. In young beech stands (up to ca 80 yrs of age) the restoration process is projected to last for 100–200 years until natural structure is fully achieved. This is still a considerably shorter time to reach naturalness in comparison with non-intervention management regimes or silviculturally influenced thinning methods. The application of the method in two Swedish beech forests (in the years 2006 and 2008) is presented and discussed.

Keywords: *Fagus sylvatica; conservation; forest dynamics; gap disturbance; extinction debt;*