



Quarries alive

Programme

Quarries alive 2018

ENHANCING BIODIVERSITY AND ECOSYSTEMS SERVICES IN QUARRIES
CHALLENGES, STRATEGIES AND PRACTICE

Quarries alive 2018

Évora, Portugal

May 2 - 4, 2018

Colégio do Espírito Santo, University of Évora
&
SECIL-Outão Plant

ORGANIZATION COMMITTEE:



<http://quarriesalive2018.uevora.pt/>

Note: The sessions schedule may be subjected to further changes.



CONFERENCE PROGRAMME

SESSION I

2 MAY – Wednesday

08:00 Registration

09:00 Opening Session

SESSION I. BUSINESS AND BIODIVERSITY IN QUARRY MANAGEMENT

Chair: Cristina Branquinho

10:00 Keynote speaker: Philippe Fonta

Managing Director Cement Sustainability Initiative (CSI)

10:30 Debate

10:45 Coffee Break

11:00 **SI.1. Alexandra Silva, SECIL-Companhia Geral de Cal e Cimento, S.A.**

Strategies to enhance biodiversity at SECIL. Outão Plant, a unique case study

11:15 **SI.2. Elodie Russier, UICN FRANCE**

Biodiversity management system and visual syntheses: two tools to manage biodiversity in quarries

11:30 **SI.3. Pilar Gegúndez Cámara, Lafarge/Holcim**

How to manage mining to enhance biodiversity

11:45 **SI.4. Dirk Fincke, European Network for Sustainable Quarrying and Mining – Eurogypsum**

Biodiversity stewardship in quarry management

12:00 **SI.5. Charlie Butt, BirdLife International/CEMEX**

The business and nature benefits of the 10-year global partnership between CEMEX and BirdLife

12:15 Debate

12:30 Lunch

14:00 **SI.6. Stéphane Rivière, Heidelberg Cement**

Partnerships for biodiversity management

14:15 **SI.7. Kostis Dragasakis, Titan**

Biodiversity Management Plan at Zlatna Panega Quarry, Titan Cement Bulgaria

14:30 **SI.8. Regiane Velozo Dias, Votorantim Cimentos**

A Partnership for a Better Future: technical cooperation between Brazilian Speleological Society - Votorantim Cimentos - Mata Atlântica Biosphere Reserve

14:45 Debate



CONFERENCE PROGRAMME

SESSION II, SIDE EVENT & POSTER SESSION

2 MAY – Wednesday

SESSION II. THE ROLE OF RESTORED QUARRIES IN THE EUROPEAN GREEN INFRASTRUCTURE

Chair: António Mira

- 15:00** **Keynote speaker: Humberto Rosa**
Director at European Commission, DG Environment
- 15:30** **Debate**
- 15:45** **Coffee Break**
- 16:00** **SII.1. Nigel Symes / Karsten Rusche, Royal Society for the Protection of Birds / ILS – Research Institute for Regional and Urban Development**
Understanding the value of restored quarries for nature and society in the context of green infrastructure provision in NW Europe
- 16:15** **SII.2. Alice Nunes, Faculdade de Ciências da Universidade de Lisboa**
Ecological restoration across the Mediterranean Basin as viewed by practitioners
- 16:30** **SII.3. Lia Mergulhão, Instituto para a Conservação da Natureza**
Habitats Directive Art 6(3), Quarries and Open Cast Mining _European Experience
- 16:45** **SII.4. Vicens Carabassa Closa, CREAL**
Carbon sequestration and vegetation development in quarry technosols amended with sewage sludge
- 17:00** **SII.5. David Álvarez, Ecoacs Reserva de la Biodiversidad / Lafarge/Holcim**
Ecosystem services valuation in quarries restoration
- 17:15** **Debate**
- 17:30** **SIDE EVENT. METHODOLOGY FOR THE NET IMPACT ASSESSMENT ON BIODIVERSITY IN THE CEMENT SECTOR (WBCSD/CSI)**
Kostis Dragasakis, Chair PG IV2, CSI
- 18:00** **POSTER SESSION**
- 20:00** **OFFICIAL CONFERENCE DINNER**
Hotel M'Ar DE AR Muralhas



08:15 Registration

SESSION III. RESTORING DEGRADED LANDS: CONTEXT, STRATEGIES & AIMS

Chair: Benz Kotzen

09:00 **Keynote speaker: Jordi Cortina**
Chair SER Europe, Universidade de Alicante

09:30 **Debate**

09:45 **SIII.1. Karel Prach, Faculty of Science University South Bohemia**
Landscape context determining spontaneous restoration of post-mining sites

10:00 **SIII.2. Maxime Séleck, University of Liège**
Biological inventories of 5 groups in 14 quarries of the Life In Quarries Project (Walloon region, BE): Biodiversity management implications

10:15 **SIII.3. Vern Newton, Heidelberg Cement Group**
A successful long-term Banksia Woodland restoration project

10:30 **SIII.4. Sylvain Boisson, University of Liège**
Mining and biodiversity: Exploring the conservation strategy of a metalloicolous vegetation in the Katangan Copperbelt (D.R.C.)

10:45 **SIII.5. Julien Laignel / Clara Lorinquer, French National Museum of Natural History / Eurovia**
How can the appropriation of a scientific tool by operators can advantage biodiversity enhancement? The Ecological Quality Index approach

11:00 **Coffee Break**

11:15 **SIII.6. Daniel Arizpe, Valenciana d'Aprofitament Energètic de Residus, S.A**
Innovative techniques for Facies Weald and Utrillas mine restoration (TECMINE)

11:30 **SIII.7. Grégory Mahy, University of Liège**
Biodiversity for business ecosystem: case studies

11:45 **SIII.8. Markus Gastauer, Instituto Tecnológico Vale, Belém**
Mine land rehabilitation: Modern ecological approaches for more sustainable mining

12:00 **SIII.9. Ana Calvo, Swedish University of Agricultural Sciences**
Restoration scenario planning using a toolkit for ecosystem service site-based assessments

12:15 **SIII.10. Klara Rehounkova, Faculty of Science University South Bohemia**
Restoration of post-mining sites: traps for aliens or paradise regained for endangered species?

12:30 **Debate**

12:45 **Lunch**



SESSION IV

3 MAY – THURSDAY

SESSION IV. SCIENCE TO PRACTICE

Chair: Karel Prach

- 14:15 **Keynote speaker: Michael Rademacher**
Bingen University of Applied Sciences
- 14:45 **Debate**
- 15:00 **SIV.1. Carolyn Jewell, HeidelbergCement**
Integrating up-to-date ecological knowledge into quarry biodiversity management – Quarry Life Award case study
- 15:15 **SIV.2. Miriam Muñoz-Rojas, University of Western Australia**
Soil strategies to address knowledge gaps in post-mining drylands rehabilitation
- 15:30 **SIV.3. José Manuel Nicolau University of Zaragoza**
ECORESTCLAY LIFE+ Project: Geomorphic reclamation restoration improves soil moisture availability for plants in Aurora-CEMEX clay quarry (Tarragona, Spain)
- 15:45 **SIV.4. Michael MacDonald, RSPB / BirdLife**
Ecosystem services at restored mineral extraction sites
- 16:00 **Coffee Break**
- 16:15 **SIV.5. Graça Oliveira, Faculdade de Ciências da Universidade de Lisboa**
Evaluating the success of different restoration actions at SECIL-Outão
- 16:30 **SIV.6. Santiago Sardinero, University of Castilla-La Mancha / LafargeHolcim**
Ecological restoration of a limestone quarry in central Spain, from Science to Practice
- 16:45 **SIV.7. Denis Medinas, Universidade de Évora**
Assessing the effects of exploitation and restoration on a quarry: perspective of a ground beetle, *Scarites cyclops* (Coleoptera, Carabidae)
- 17:00 **SIV.8. António Mira, Universidade de Évora**
Quarries meet Biodiversity: insights from a long-term project of quarry rehabilitation in a natural park
- 17:15 **SIV.9. Daniel Martin-Collado, Complutense University of Madrid**
Contribution of a restored gravel pit lagoon system to the functional connectivity at landscape scale using European Otters as indicators
- 17:30 **SIV.10. Zoe Rohrer, University of Alcalá / LafargeHolcim**
Breeding biology and habitat preferences of Sand Martin (*Riparia riparia*): basis for a management protocol in mining areas
- 17:45 **Debate**
- 18:00 **Closing remarks and Posters awards**
- 18:30 **AFTER-CONFERENCE COCKTAIL**



FIELD TRIP

4 MAY – FRIDAY

ARRÁBIDA NATURAL PARK, OUTÃO QUARRIES & OUTÃO PLANT NURSERY

Departure: 8H00 (Colégio do Espírito Santo, University of Évora)

End of visit: 13H20

Lunch: 13H30 (canteen at SECIL-Outão Plant)

We invite all participants interested in witnessing 35 years of practical experience and scientific studies in Outão quarries and visiting one of the most valuable Portuguese natural heritage sites, the Arrábida Natural Park. The conference offers the opportunity to visit SECIL-Outão cement plant, where it can be observed the progressive rehabilitation of Outão quarries, which began in 1982, and the plant nursery, where currently 17 native species are produced. The participants will also be able to visit the Arrábida Natural Park, with rare panoramic landscapes associated with an extraordinary diversity of vegetation mosaics. At Arrábida we will look at two interesting sites: Jaspe and Mata do Solitário. At Jaspe exists a small quarry of Arrábida conglomerates which exploitation finished in 1976 where it's possible to observe the natural colonization. The forest Mata do Solitário represents one of the best testimonies of the Tertiary vegetation, in Portuguese territory, translating the Mediterranean environment that the glaciations did not affect. Join us in this field trip where we can exchange experiences and see beautiful landscapes.

The field trip is restricted to a maximum number of 80 participants and registration is required.



TRAINING SCHOOL

4 - 5 MAY – FRIDAY AND SATURDAY

INTENSIVE COURSE ON RESTORING DEGRADED LANDS TO IMPROVE BIODIVERSITY: HANDS ON A QUARRY SITE

SCOPE

Land Degradation caused by human activities affects a large area of the world land, including the SW region of Europe. Its effects on ecosystems are deep and widespread and are expected to increase under a global change scenario. Our sustainability on the planet depends on the understanding of how to repair and/or manage damaged and threatened ecosystems. Ecological Restoration and Sustainable Land management are the most positive cost-benefit approaches. Restoration efforts in the Mediterranean Basin have been changing from a silvicultural to an ecological restoration approach. However, these projects are seldom guided by ecological restoration principles, as shown by Nunes et al. (2016). This work showed that restoration in EU countries relies on non-native plant species. Unexpected results (e.g. inadequate biodiversity) were reported for 50% of the projects and restoration success was never evaluated in 22%. Long-term evaluation (>6 years) was only performed in 31% of cases, and based primarily on plant diversity and cover. Absent or inappropriate monitoring may prevent the understanding of restoration trajectories, precluding adaptive management strategies, often crucial to create functional and sustainable ecosystems. This survey highlighted the need for improved scientific assistance and information exchange for planning and implementation, for greater use of native species of local provenance, and for long-term monitoring and evaluation, including functional and ecosystem services' indicators, to improve and spread the practice of ecological restoration. The effect of environmental changes on ecosystems varies according to their resilience, which depends on biodiversity. Traditionally, ecologists have used the taxonomic diversity of communities to assess biodiversity changes in ecosystems. However, environmental changes may lead to compositional shifts in communities over time, which may or may not precede species loss, but might nevertheless affect ecosystem functioning. Species influence ecosystem processes via their functional traits. Functional traits are species attributes, measurable at the individual level, that influence their responses to environmental conditions (by affecting their fitness), or determine their influence on ecosystem properties. Quarries are natural laboratories of extreme situations of land degradation where experiments can be undertaken to test different restoration techniques, and indicators to monitor their success.



TRAINING SCHOOL

4 - 5 MAY – FRIDAY AND SATURDAY

AIM

Demonstrate under field conditions a series of experiments developed to restore quarries that are also useful for other types of land degradation. This course aims to: (i) demonstrate the latest scientific and technical advances in land restoration to improve biodiversity; and (ii) develop practical skills concerning tools to monitor restoration success, using biodiversity-based metrics. Adding to these objectives we expect participants to exchanged their own experience with scientists and practitioners of different disciplines involved in the restoration and the monitoring of degraded drylands.

STRUCTURE

Show under real conditions a diversity of restoration techniques, their experimental approaches, and outcomes. By the end of the course the participants will have:

- 1) acquired silks to evaluate functional diversity, in field conditions: sample, identify, calculate, and interpret different biodiversity-based metrics in different species from different taxa, namely functional diversity.
- 2) compare different biodiversity-based metrics as indicators of the restoration success.