THE WORLD CONFERENCE ON ECOLOGICAL RESTORATION

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Conference Secretariat

di&co
Paseo de Sagasta, 19. Entlo dcha
50008 Zaragoza. Spain
Phone Number: +34 976 211 748,
Fax +34 976 212 959)
secretariat@ecologicalrestoration.net

Conference Scientific Secretariat

Pyrenean Institute of Ecology-CSIC.
Avd. Montañana, 1005, Apdo. 202
50. 080 - Zaragoza. Spain
http://www.ipe.csic.es

Chairperson:
Prof. Francisco A. Comín, comin@ipe.cisic.es
Coordinator:
Dr. Mercedes García, sericonference2005@ipe.csic.es

Society for Ecological Restoration International http://www.ser.org
285 W. 18th St., #1, Tucson, AZ 85701, Ph nº: 520-622-5485, F:520-622-5491

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Preface

This volume contains abstracts accepted for presentation at the 2005 World Conference on Ecological Restoration. They have been distributed in different sessions according to the appropriate conference program and the author's specifications, as much as possible. The Conference Program includes global, landscape, ecosystem, habitat, population, social, economic, urban, damaged and contaminated sites, and technical aspects of environmental restoration, as well as symposia proposed and arranged by participants.

Abstracts are arranged alphabetically in three groups (plenary, oral, and poster presentations) to facilitate organization. Texts have not been edited to respect original documents The name of each presenter is underlined. There is an author index at the end of the volume.

Thanks are extended to the Local Organizing Committee, the Scientific Committee, and to SER International staff for help in evaluating the abstracts and planning the conference program. If there are questions or requirements related to this volume and scientific aspects of the conference, we remain at your disposition.

Francisco A. Comín Mercedes García

Chairman Coordinator
2005 World Conference on Ecological Restoration

in the removal of habitat. Numerous projects across Australia have recently been initiated to mitigate the negative effects of roads and traffic. We will present a number of case studies from eastern Australia where attempts to restore habitat and connectivity have been implemented. We will discuss the effectiveness of these measures and will highlight a bold research initiative to quantify and mitigate effectiveness by focusing on the population-level effects. This research is a collaborative project between University and a road construction agency and is sponsored by the Australian Government. It will combine three techniques (empirical observations of animal movement, genetic analyses and metapopulation modeling) to specifically address questions related to the barrier effect of roads on a diverse range of taxa, including mammals, reptiles and invertebrates. The effectiveness of mitigation measures will then be assessed by quantifying changes to population viability.

Keywords: Road ecology, Road mitigation, Restoration ecology, Australia.

Biogeochemical regulation of metal availability in wetland sediments by sulphur and nitrogen

van der Welle M.E.W.[1], S.C.M. Haaijer[2], L.P.M. Lamers[1], J.G.M. Roelofs[1]

[1] Dept of Aquatic Ecology and Environmental Biology, Radboud University Nijmegen
[2] Dept of Microbiology, Radboud University Nijmegen The Netherlands

As a result of intensive agriculture in the Netherlands, high concentrations of nitrate are found in surface water and groundwater of many freshwater wetlands. In waterlogged (sub)soils, sulphide containing deposits (mainly iron sulphides) are oxidized by the chemolithotrophic microbial reduction of NO_3, thereby increasing sulphate concentrations in the groundwater. Depending on the actual pH, pyrite-associated metals may simultaneously be released into the groundwater. In field experiments it has been found that increased NO_3 pollution can indeed lead to oxidation of iron-sulphides and decreased sulphate reduction. This could also be demonstrated in controlled mesocosms.

High NO_3 concentrations can, however, also act as a redox buffer, thereby decreasing the mobility of metals in the sediment. Although this may be beneficial for toxic metals, it may also lead to deficiency symptoms in plants with respect to essential metals like iron. Based on field observations and microcosm experiments, the present paper will discuss the mechanisms by which S and N pollution may interfere with metal biogeochemistry and indicate the implications for metal toxicity assessment.

Keywords: pyrite, nitrate, metals, pollution, biogeochemistry.

Dealing with societal support in ecological restoration. The case of the Green River Plan in the Netherlands

van der Windt H. J., J. A.A. Swart

Science & Society Group. Department of Biology. Groningen University. Kerklaan 30. 9750. AA Haren. The Netherlands

It is generally accepted that support from stakeholders and citizens is essential for successful ecological restoration. However, it is less clear what this means for the process of decision-making and the role of ecological expertise. We studied the decision-making of the so-called Green River Plan in the Netherlands. This plan aims to restore a brook valley system in the Netherlands and was proposed by nature protection organizations. Beside conservationists other interest groups as farmers, water managers, city planners, landscape protectionists, and industries are involved. Top-down decision-making is thought not to be successful since some stakeholders are able to block the process. The main actor, the provincial government, has therefore chosen for an interactive procedure to require participation of all stakeholders. So far, this approach seems to be successful. All stakeholders, including local authorities, support the plan to restore the brook valley. However, it appears that it is very difficult to get an agreement on issues like the location of the restored brooks and the size of the brook banks. It can be questioned whether ecological knowledge is adequate to solve these disputes. Beside interests, ecological expertise is not considered as sufficiently reliable and transparent to all actors. Moreover, science and technology studies have learned that it is important that knowledge is socially robust. This means that it can be linked to other types of knowledge and approaches. In other words, ecological expertise should be robust in different social contexts, and modifiable to some extent. We conclude that this requirement of ecological expertise may easy be underestimated in restoration projects.

Keywords: social robustness, ecological expertise, stakeholders' view, decision-making.