



# Bulletin

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## International Association for Landscape Ecology

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### LANDSCAPE ECOLOGY IN BRAZIL

by Jean Paul Metzger<sup>1</sup> and Vânia Regina Pivello<sup>2</sup>

Landscape Ecology (LE) is an emerging science in Brazil today and the landscape approach is becoming more and more adopted especially in the planning sectors.

The embryo of LE in Brazil dates from the 60's, when a group of biogeographers, with an European education, started to interpret the land from a broader and inter-related point of view. First, physiographical and biological issues were linked together to explain land units; the social conjuncture was accounted for later on. Gradually, a new science started to gain strength and, in the 80's, when Landscape Ecology was flourishing in the developed world, it was also rooting in some Brazilian research institutions, propelled by the rapid progress of computing technology and spatial analyses.

In 1986, significant additions to the Brazilian environmental legislation occurred and environmental impact assessments started to be required for most engineering projects, demanding the exercise of multi- and transdisciplinarity. A much higher integration between research centres and the governmental regional planning institutions was achieved and the landscape approach passed from the academic sphere to practical life.

Today, approaches at the landscape scale are embodied in several domains, as regional and local planning design, environmental conservation and natural resource management. In order to evaluate the "state of the art" of LE in the Brazilian research centres, we carried out a survey, by searching in the CNPQ and FAPESP (science funding agencies) data banks and by sending questionnaires, via e-mail, to the main universities, in order to find out who was dealing with LE and how. This preliminary survey focused on Ecology-, Geography- and Architecture departments of most public universities, and also on governmental institutions that worked on planning and remote sensing applications.

The information obtained was classified according to the location of the institution in the country and according to the main landscape types (e.g. biomes) under investigation. We found 34 laboratories dealing with the LE approach, almost all of them applying LE concepts on rural or urban planning, natural resource conservation, or fragmentation analysis. Twenty universities, four research institutes and one non-governmental organisation are involved. However, only a few institutions, as the University of São Paulo or the INPA (National Institute of Amazon Research), are also looking upon theoretical questions in LE.

As the Southeast and the South of the country are the most developed regions, they were expected to concentrate the research on LE and applications. Indeed, they were respectively responsible for 55.9% and 20.6% of the labs dealing with LE, and only São Paulo State (in the Southeast) accounts for 35.3% of the total labs. The Centre-west region responded for almost 12% of the labs, and the North and Northeast, near 3% each.

Most of the studies are being developed in the Atlantic forest region, which was cited by 50% of the labs; the Amazon forest, the Cerrado biome, the coastline ecosystems, as well as urban and agro-ecosystems are being focused by 10 to 20% of the labs; some vegetation types as Pantanal and the *Araucaria* (coniferous) forest were cited by only 3% of the labs and the Caatinga (dry forest) was not mentioned by any of the institutes. Most studies are based on remote sensing analysis and GIS, using mainly LANDSAT satellite images and aerial photographs.

It is clear that research and application of LE in Brazil is just beginning. Much more has to be done, especially if one takes into account the high diversity of ecosystems and environmental conditions of the country, the large gradient of human changes in the natural systems, and the variety of landscapes created by man.

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**Landscape Ecology in Brazil***continued from p. 1*

The strong pressure exerted by international corporations towards a planned and more sustainable development in Brazil demands the search for alternative ways of production, able to put together economic expansion and environmental conservation. In this sense, the understanding of natural system components and relationships at different scales is essential, and Landscape Ecology revealed itself to be an excellent tool to promote this.

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**NEW BOOK!**

*Bioregional Planning: Resource Management Beyond the New Millennium* by David Brunckhorst. Gordon & Breach / Harper Academic. This book focuses on integrated and complementary resource use and conservation planned and implemented at landscape-regional scales. It meets an essential need in the area of a synthesised approach and strategy (with practical guidelines for implementation) encapsulating ecosystem management, community development and sustainability, land use planning, and environmental policy areas.

The book is suited for professionals and students - policy makers, planners, land managers and professionals across a variety of institutional and government agencies.

**WE NEED YOUR INPUT: ARTICLES, BOOK REPORTS, MEETINGS!**

In order to be up-to-date with ongoing activities and research in the field of landscape ecology we strongly encourage you to send us your articles, informations etc. E-Mail is so easy and we'll always find a place to publish your ideas!

**... IN THE IALE-BULLETIN**

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**DEADLINE FOR THE NEXT BULLETIN IS AUGUST 31, 2000**

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IALE on the Internet: IALE International: <http://www.crlc.uoguelph.ca/iale/>

## BULLETIN AS PDF-FILE?

Your answers concerning the distribution of the Bulletin in a digitized form (IALE Bulletin Vol. 18 no.1) confirmed that members from countries with limited access to the Internet prefer the paper distribution whereas members from highly developed countries voted for digital distribution. Percentagewise the vote was 80% for digital distribution, 20% for paper distribution. Rob Jongman and Felix Kienast will discuss further steps. However, as usual you'll find the pdf-version of the latest Bulletin on [www.wsl.ch/land/iale/bulletin.htm](http://www.wsl.ch/land/iale/bulletin.htm). Try it out!

## MEETING REPORT: PAN-EUROPEAN FORUM FOR LANDSCAPE MONITORING

This meeting was held at Grange-over-Sands, UK between 19th-20<sup>th</sup> February 2000 and was initiated by Bob Bunce on behalf of the Committee of IALE (UK). The meeting was attended by 24 people from 17 European countries, who represented the IALE organisations of their various countries. The main objectives of the meeting were to promote:

- an integrated monitoring at the landscape scale, rather than sectoral monitoring
- a Pan-European approach to landscape ecology

The initial stimulus for convening a Forum evolved during the NordLaM Workshop (Nordic Workshop on Landscape, Environment and Biodiversity Monitoring) held in Denmark in October 1999. During this meeting it became clear that there were many monitoring initiatives at different scales and for different objectives but with very little integration and certainly no coordination at a landscape scale. This was discussed at the IALE (UK) Committee Meeting held in November 1999 at which it was decided to support the meeting with limited finance and under the auspices of our regional organisation.

The first session involved an overview of landscape monitoring activities for each of the European countries represented. This formed a very useful basis for the subsequent discussions and will provide the framework for one of the principal recommendations outlined below (a Pan-European register of monitoring projects). The different countries presented marked contrasts in the level, extent and degree of development of monitoring varying from the over 20-year old countryside surveys of Great Britain to the various programs underway in Switzerland to Latvia

where no real monitoring is taking place but some individual activities such as the Land Survey are directly relevant.

The second session involved other European monitoring activities and projects such as MIRABEL: Models for Integrated Review and Assessment of Biodiversity in European Landscapes. MIRABEL is a conceptual framework designed to facilitate analysis of the consequences of environmental change for biodiversity and was carried out for the European Environment Agency. In addition, the scope of landscape studies within the European Union was also discussed and it was recognised that statutory responsibilities at the landscape level are rather vague. However, it is essential to fully understand the complexity of such initiatives at the European scale, which are currently taking place in response to policy initiatives such as the Rio Convention and EU Directives.

Following these discussions, many issues were identified that needed to be discussed either at Grange-over-Sands or subsequently at the next meeting of the Forum. It was however, then decided to focus on three primary issues:

- The objectives for the Forum
- The structure of the Forum
- The forum of a possible journal and communication

The final session was based on these three issues and took place following the excursion which included limestone woodlands and grasslands, arable field networks and coastal habitats, as well as lunch in a traditional English pub! The principal conclusion was that it was decided to set up a Pan-European Forum on Landscape Ecology Monitoring with the following objectives:

1. To set up a meta database of 'who is who' in monitoring including individuals, organisations, products and landscapes. This will be carried out by a questionnaire to be prepared and circulated via the Secretariat to all members who attended the Grange meeting.
2. To establish communication between members of the Forum and all discussion items produced at the meeting.
3. To inform central and national IALE groups about the creation and the objectives of the Forum.
4. To produce an evolving handbook of landscape monitoring in Europe.
5. To produce a framework for integration of monitoring data on European landscapes.
6. To make clear statements of relationships between existing EU policy directives and the objectives of the Forum.

*continued on page 4...*

**MEETING REPORT...** *(cont. from p.3)*

A preliminary structure for the Forum was set up in that it should meet every six months and participants should be either from national IALE organisations or, if no national IALE organisation exists, then people who are involved in similar monitoring projects in their own countries. The structure of the Forum should be flexible but it was determined that the next meeting should be at Roskilde at the Multi-Functional Landscape Meeting in October 2000 where guidelines and a constitution will be set up. There should be a permanent Coordinator (the preliminary Coordinator will be Bob Bunce) and a Secretariat (the preliminary Secretariat is at ALTERRA under the coordination of Berien Elbersen). Sources of funds to organise meetings, travelling and for the Secretariat need to be identified so that the Forum can develop an adequate programme of collaboration. If anyone wants further details information or wishes to add suggestions, then please contact the individuals listed below.

Finally, a strong suggestions was made and supported by everyone attending the meeting that a European IALE should be set up in order to encourage European integration. Further enquiries are being made to discuss the feasibility of this suggestion.

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**FOUND ON THE WEB...**


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**Museum Archive in the Tropics**

The Domingos Soares Ferreira Penna Library, founded in 1894, and the Goeldi Museum Archive gather, care for and provide access to documentation and information on the areas of activity of the Museum and on Amazonia as a whole. The specialized collection on Amazonian subjects bring together documents acquired over the years through purchase, donation, exchange and custody. Book collections (some quite rare, editions from the 16<sup>th</sup> century on), photographs, films, tapes, microfilms, periodicals and brochures total over 200,000 items, highlighted by more than 26,000 books and almost 6,000 scientific periodicals titles.

<http://www.museu-goeldi.br/>

**DIARY**

September 6 - 9, 2000

The Culture of the European Landscape as a Task, Dornach (near Basle), Switzerland.

<http://www.goetheanum.ch/sektion/nws/Landschaft.htm> (e-mail: [h.c.zehnter@goetheanum.ch](mailto:h.c.zehnter@goetheanum.ch))

September, 10-17, 2000

European Landscapes: From Mountain to Sea. 19th Meeting of the Permanent European Conference for the Study of the Rural Landscape. Royal Holloway, University of London, and the University of Wales, Aberystwyth

<http://glacier.gg.rhbnc.ac.uk/PECSRL.html#anchor302882>

October 16-18, 2000

IEP-Symposium on "Issues in Global Change". Lisbon, Portugal.

<http://www.elsevier.nl/locate/iep2000>

October 16 - 20, 2000

ERS-ENVISAT Symposium: Looking down to Earth in the New Millennium

<http://www.esa.int/sympo2000/>

October 18-21, 2000

International Conference: Multifunctional Landscapes. Interdisciplinary Approaches to Landscape Research and Management. Roskilde (Denmark), Organised by the Centre for Landscape Research University of Roskilde, Denmark

<http://www.geo.ruc.dk/vlb/conference.htm>

February 25 - 27, 2001

Taking nature seriously: Our idea for the conference originally emerged out of concern over the ways that the so-called "Science Wars" were dividing scholars and scientists. The debates in this area became highly publicized in the last few years, particularly in light of Alan Sokal's "parody" article, "Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity". This article, published in a special issue of *Social Text* on the topic of the "Science Wars," was designed by Sokal to test his hypothesis that a leading journal in cultural studies would "publish an article liberally salted with nonsense if (a) it sounded good and (b) it flattered the editors' ideological preconceptions."

<http://darkwing.uoregon.edu/~tns/>

July 2-6 2001

Veterinary Conservation Biology: Wildlife Health and Management in Australasia. Taronga Zoo, Sydney, Australia

<http://www.farmwide.com.au/nff/vetascscn/confer/conservation.htm>