



# bulletin

## International Association for Landscape Ecology

### EDITORIAL

#### IALE WORLD CONGRESS OTTAWA JULY 1991

The dates for the IALE World Congress in Ottawa 1991 have been settled: Sunday 21 July to Thursday 25 July 1991. To get the best air fares, participants are recommended to arrive Saturday 20 July. The opening of the Congress will be Sunday night and the scientific sessions will conclude on Thursday 25 July. Excursions will be after the Congress. For those interested, the Ecological Society of America will meet August 4-8 in San Antonio, Texas together with the American Institute of Biological Sciences.

#### IALE CONGRESS CURRENCY FUND

A Congress Currency Fund has been founded to seek a partial remedy for the problem, that many outstanding landscape ecologists from developing countries as well as from countries with lack of hard, readily-exchangeable currency, will have difficulties in participating in the IALE Symposium in Ottawa 1991. The fund will first of all gather money for travel expenses.

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IALE will try to assist in different ways by providing official invitations, trying to offer cheap accommodation possibilities, giving support for registration fees etc.

All the regional organizations has been asked to organize regional efforts to gather money for the fund. Contributions or proposals, that can support the goal of the fund, can be passed to regional contact persons given at page 18 or

direct to the administrator of the fund:

Dr. James F. Thorne

Department of Landscape Architecture  
and Regional Planning

210 South 43rd Street

University of Pennsylvania

Philadelphia, PA 19104-6311

U.S.A.

Telefax: 215-898-0215

E-mail:Thorne@PENNDRLS.UPENN.EDU

(Bitnet)

Jesper Brandt

The International Association for Landscape Ecology (IALE) exists to promote interdisciplinary scientific research and communication between scientists and planners

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The IALE BULLETIN is published 4 times yearly. News items, articles comments and suggestions are welcomed.

**ADDRESSES**

**IALE Secretariat:**

Jesper Brandt  
Inst. for Geography ,Socio-econ.  
Analysis and Computer Science  
Roskilde University Centre  
P.O. Box 260  
DK-4000 Roskilde  
DENMARK

Phone: (+45) 46 75 77 11  
Telex: 43 158 RUBIBL DK  
Telefax: (+45) 46 75 74 01  
E.Mail: iale@meza.ruc.dk

**IALE Bulletin Editor:**

Peder Agger  
National Forest and Nature  
agency  
Ministry of Environment  
Slotsmarken 13  
DK-2970 Hoersholm  
DENMARK

Phone: (+45) 45 65 53 76  
Telex: 21 485 NATURE DK  
Telefax: (+45) 45 65 54 77

MS. IALE-Bulletin

Landscape Ecology in Europe and North America: a Personal Impression

by Paul Opdam

In September 1988 I made a trip along eight landscape ecological research centres in Canada and the United States. I was kindly invited to come and visit the following laboratories: Canadian Wildlife Service and Department of Biology, Carleton University, Ottawa (Host: Gray Merriam), University of Wisconsin-Green Bay, Wisc. (Bob Howe), Institute of Ecosystem Studies, Millbrook, New York (Mark McDonnell), University of Virginia, Charlottesville (Lenore Fahrig), Colorado State University and the US Fish and Wildlife Service Research Centre, Fort Collins, Colorado (John Wiens), University of New Mexico, Albuquerque (Bruce Milne), Oak Ridge National Laboratories, Oak Ridge, Tennessee (Monica Turner) and Harvard University, Cambridge Mass. (Richard Forman).

It is not my aim here to report in detail the many things I learned in all these places. What I want to do is to make a general comparison between the trends in landscape ecology I viewed during this trip and the state of this

new branch of the environmental sciences in Europe, as far as I am able to assess that.

Landscape ecology was born in Europe as a fusion between the functional (ecosystem) approach of ecology and the spatial approach of geography. Landscapes were described and mapped as extensive parts of the earth surface, characterized by a particular heterogeneity. Maps showed a mosaic of several types of small, discrete subunits, classified according to features of geomorphology, soil or vegetation. Later on a more functional approach came more to the front, focussing on spatial relations which were assumed to link the subunits, i.e. abiotic and biotic fluxes.

European landscape ecologists were, and still are, concentrated in the dense populated parts of Europe, where man has changed the original landscape of deciduous forest into a patchy agricultural landscape. Fields, often intensively managed, are mixed-up with various kinds of small elements, either remnants of former natural vegetation or man-made features like farms, drinking pools, windbreaks and road verges. The agricultural landscape in Western Europe (and also that in the Northeastern United States and the contiguous parts

of Canada) has put its mark upon the prevailing landscape notion in landscape ecology. This is the landscape with patches, corridors and matrix put forward by Forman and Godron in their handbook. This is where fragmentation effects are investigated, by focussing on the remaining non-agricultural elements in a (for most species) inhospitable matrix. This is the landscape of small nature reserves surrounded by urban centres or agricultural production core areas, where the object of conservation is threatened by influx of nitrogen via upwelling groundwater polluted miles away in overfertilized areas. But first and for all, this is the landscape where the ecotope was "invented", the "homogeneous, functional landscape unit" principally different in a functional sense from its surroundings, with distinct boundaries to be recognized by a sudden overall change in vegetation characteristics. (And even in the adjacent forest, where timber production is the prevailing land use type, the vegetation has been subdivided into distinctive units of homogeneous structure.) And, last but not least, in this landscape the scale of observation is imposed by the dimensions of fields and the needs for wind cover and fuel in the (former) farming system.

Imagine now a Dutch landscape ecologist with this notion of landscape walking in an American prairie or an extensive (semi)natural woodland with no apparent repeating pattern of particular types of spatially well defined subunits. Where are the boundaries, the patches, the matrix? How to recognize spatial difference, which features in the vegetation must be used for that, and at what spatial scale of solution?

He learns that, here, landscape ecologists do not talk about patches and matrices, do not ask questions about fragmentation effects or ground-water influx. In such landscapes, the key concepts are heterogeneity and scale, and the major problems are how to describe heterogeneity at various levels of spatial scale. Here, landscape ecology starts at a basic point which was not explicitly raised by colleagues in agricultural landscapes. In Europe, we went through this stage rather quickly in the lead up to land use classification schemes and the assessment of conservation values of extended areas of land. The appropriate scale was self-evident, imposed by the ecotope structure, and we could start immediately by drawing boundaries on a map and describing differences in features at either side of the borderline. Where borderlines were

less sharp cut, the concept of ecotope or gradient was helpful.

Of course, there is a bit of exaggeration in these arguments, but it makes clear, I hope, that landscape ecologists ask different questions due to a different notion of how "their" landscape looks like. This divergence is reflected in what I encountered during my trip along the landscape ecology centers mentioned before. Effects of fragmentation of habitat on organisms are investigated in Ottawa (Merriam, Villard, Freemark), in Wisconsin (Howe) and Charlottesville, Virginia (Dueser, Connor). The landscape where they live and make their observations, resemble the European agricultural landscape: perhaps the scale is somewhat different, the borderlines are less sharp cut and the woodlots, hedgroves and farmyards in a "matrix" of farmland. Birds and small mammals are used as examples of organisms presumably affected by the decreasing size and increasing isolation of habitat remnants. In Cambridge, Mass., Forman focusses on how the shape of borderlines affects the crossing of animals between ecotopes. Sometimes a species was selected as an object of study because it is threatened, like the Fox squirrel in Virginia and Maryland. More often, it is just scientific interest that primarily

drives investigators, not so much the urge for application of ecological knowledge into spatial planning schemes. Compared to the Dutch situation, where applied work is dominant, this is a striking difference. An exception is Cambridge, Mass; At Harvard University (Forman), a Dutch landscape ecologist encounters such familiar issues as land evaluation maps and spatial planning design.

How different are the approaches in Oak Ridge, Tennessee (Gardner, Turner, Dale), Albuquerque, NM (Milne), Fort Collins, Col. (Wiens) and Millbrook, New York (McDonnell, Pickett, and partly also in Virginia (Dueser, Fahrig). Here, the emphasis lies on heterogeneity, spatial scale, patch dynamics and disturbance. Neutral models are being developed there, useful to test if landscape patterns deviate from random expectation (I don't believe that European landscape ecologists would be very likely to have asked such a question, being so familiar with man-made deviations from random patterns!). This is a notable step forward in methodology, allowing to refute null-hypotheses and to detect the influence of processes. The years to follow must learn how this (still quite basic) approach can be developed into a more practicable one. An interesting



field of application is the spreading of disturbances (like fires) through heterogeneous systems, but this disturbance can easily be replaced by a moving organism. Part of this work is carried out in Long Term Ecological Research areas: undisturbed, extensive tracts of native vegetation, which are also the sites where long-term changes in ecosystems due to climatic changes are documented and explained.

Landscape ecology is growing up fast into a diversified branch of ecology. This diversity is very important: the confrontation of different approaches will bring us a step further in developing a general theory. We should promote exchange of ideas, intensify the stream of information between Europe and North America and invite other continents to join the discussion. Europeans should publish more English papers than they used to, and Americans should be more aware of what's going on in Europe than they are probably inclined to! IALE is ready to bring us all together.

Paul Opdam  
 Department of Landscape Ecology  
 Research Institute for Nature Management  
 PO box 46, 3956 ZR Leersum  
 The Netherlands

## IALE-MEETINGS

### Fifth Annual Landscape Ecology Symposium

The U.S. Regional Association of the International Association of Landscape Ecology will sponsor a symposium

"The Role of Landscape Ecology in Public Policy-making and Land use Management"

21-24 March 1990

at Miami University, Oxford, OH.

Landscape ecology emphasizes interactions in space and time and exchanges across heterogeneous land areas. A major focus of landscape ecology includes the responses of society to these changes in spatial and temporal patterns, as well as society's influences on these patterns. This symposium will emphasize the importance of an increased understanding of the principles and practice of landscape ecology regarding its role in public policy, resource management, regional planning and land use design.

Abstracts for contributed posters and 12-minute papers (specify preference) should be less than 300 words, and double spaced on a single page.

Abstracts must be submitted in triplicate by November 15, 1989. Submit abstracts

to:

Dr. James F. Thorne  
US-Iale Program Chair  
Department of Landscape Arcitecture  
and Regional Planning  
210 South 34 th Street  
University of Pennsylvania  
Philadelphia, PA 19104-6311  
(215)898-5784 (-6591 for messages)

Registration fees are £35.00 US  
(regular) and £20.00 (student).

For further information on arrangements  
and registration, contact the local  
host:

Dr. John L. Vankat  
Department of Botany  
Miami University  
Oxford, OH 45056  
(513)529-4206 (-4200 for messages)

The IALE Conference on the Cultural  
Aspects of Landscape, held June 1989 in  
Groeneveld, Baarn (The Netherlands.)  
- A summary by Jan I.S. Zonneveld.

From 28-30 June 1989 the Working Group  
"Culture and Landscape" of IALE held its  
first international conference at Baarn  
(the Netherlands). The theme discussed  
during the three days was: "Cultural  
Aspects of Landscape" and it can be

stated that the organisers, Prof. Dr.  
Josef Fanta and Dr. Hanna Swouden-Svobo-  
dov had made a very fine job of it. It  
may be true that in the beginning some  
of the participants were wondering what  
kind of connection could exist between  
some of the lectures that were announced  
in the program. And during the start of  
the conference (rather disrespectfully)  
the conference was compared with a  
chicken run in which from the four  
corners some quite different kinds of  
fowl were let in. There were some diffi-  
culties in understanding each other  
indeed. The attendants of the conference  
were in the same chicken run, but each  
group had its own language, its own jar-  
gon and its own point of view. But that  
was to be expected, it was, under the  
given circumstances, quite normal. For  
the goal of this conference had precise-  
ly been to have the chicken run of Land-  
scape Ecology filled with "all sorts and  
conditions of fowl", varying from natur-  
al scientists, cultural anthropologists,  
planologists, landscape architects,  
students of art and artists, all having  
an affinity to "landscape" and have them  
cackling. The results were very inter-  
esting and promising indeed. Of course it  
was not possible to end the conference  
with a document in which all questions  
that arose were answered and all pro-  
blems solved, but we learned how to put

our questions more adequately.

As expected the words "landscape" and "nature" were sources of misunderstanding and discussion. The need of a generally accepted significance of used terms was felt, at any rate it proved to be worthwhile to exchange ideas regarding the meaning of the expressions used by the representatives of the various disciplines. The misunderstandings were, of course, not only based on differences in jargon or language, but on differences in objective and philosophical training as well. The art historian or the artist involved in landscape painting or geo-poetry generally is thinking in other categories than the biologists who just finished a landscape ecological survey of a certain region or the government officer who has the task to "protect nature".

Nevertheless we may state that after three days of exposing conceptions and exchanging ideas the confusion of thought made place for the awareness of being interested in the same object, even though in some cases the questions that are put and the aims that are pursued do not completely coincide. The well known old-Indian story of the three blind men, investigating the elephant, but coming to very different conclusions

is very appropriate in this respect. The same holds true for the "parable of the ball", told by I.S. Zonneweld (in this parable one "thing", a piece of stone with the shape of a spherical shape is evaluated very differently by different people, a boy, an artist, a mineralogist, a housewife and a historian).

The papers read during the conference can be grouped into four categories:

- Landscape Ecology
- Management of nature and landscape
- Psychological and perceptual aspects
- The arts in relation to landscape.

In the first mentioned group Panta and Naveh concentrated on the necessity of holistic thinking and the function of landscape ecology in bridging the cultural lag that is observable in (some) scientific ecological research and in our modern industrial society.

In the second group we were informed by some authors regarding the use of landscape ecological concepts in landscape management and landscape planning in various parts of the world (e.g. Finland, Scotland, the Netherlands (2x), Germany, Nepal, Uganda, by resp. Sepänmaa, Goodier, Sloet, Dekker, Zvolsky, Zigray & Gautam and Oneka).



The papers of the third group were devoted to the psychological and cultural side of the interrelation between mankind and landscape. The themes were a.o.: phenomenology of spatial perception (Allesch), environment orientations and their impact on landscape (Greverus), perceptions of local people in landscape ecology and sustainable development (Nassauer), the country(side) as a symbol in the consciousness of a little town's inhabitant (Patocka), psychological significance of a place of your own (Kabela), the "expression" of a landscape (Koster), the deconstruction of landscape and the construction of landscape environment (Olwig), designed "natural" environment in urban architecture (Keul).

The fourth group included some beautifully illustrated lectures on the ways in which landscape comes to the fore in the art of painting (Kilian, Speilmann, Swouden-Swobodov) and in poetry (Zonneveld), the probable symbolism in Dutch 17th century painting (Giltaij) and aesthetics in its role of either "Counter-nature" or "second-nature" (Erzen); Bosch gave an illustration regarding the relation between literature and (landscape-)painting and Hunter showed some results of "Landscape art", the art that uses landscape as a medium.

The closing session was used for collecting views regarding the results of the conference. Here I summarize some of the remarks that were made:

- We live in a period in which integration of knowledge is badly needed. The natural sciences, cultural sciences, planning, management, politics and arts, that are involved in our environment are influencing each other and therefore must no longer be studied or applied as separate disciplines only. Cooperation and deliberation are important key words. One of the tasks of Landscape Ecology is to exploit its transdisciplinary character and being a bridge between natural sciences and human ecology (a task which up till now has not yet been fulfilled adequately). During these integrative processes natural scientists have to learn that the relation between mankind and his environment is not a question of "natural" processes only: the human perception plays a very important role as well, a perception that is conditioned by culture, by the social and scientific environment of the concerned individuals or groups, for: "Culture is the biotope of mankind in regard of his cultural behaviour". But in the present landscape ecology we are not (yet) fully doing

justice to the complete meaning of the word "oikos": house (of mankind). On the other hand "the representatives of the arts must be willing to admit the values of nations and visions, gained by the natural sciences.

- Practical environmental problems generally are not solved by people of the type "generalist" but by specialists, who are able to think holistically. Therefore we need technologists with a "holistic" (landscape ecological) training.

- Who decides about the environment? Local people, artists, scientific (for instance bio-ecological) specialists, landscape architects, social planners, politicians, trialand error? One of them, some of them, all of them? This question requires clear ideas regarding the function(s) of the landscape concerned. Landscape ecology must not restrict itself to only providing the decision makers with the necessary data. It has the task to accompany the process of realization of environmental plans, the drawing up of bills and rules, etc. and to continually point out this necessity to the various governmental agencies.

- It would be very useful if in the near

future more conferences could be organized (why should meetings of this type not be called "Groeneveld-conferences"?) in order to strengthen the bonds between people representing the natural and the cultural aspects of landscape studies and paving the ways between these two groups, ways that must be trodden in the future more intensively than has been done before. It was proposed to devote one of these conferences to the presentation of (practical) cases that could be analysed by an interdisciplinary forum.

#### OPENING SPEECH "GROENEVELD"

28.6.1989

By Isaak S. Zonneveld,  
Past-President of IALE

Dear audience!

Welcome in the country where the word landscape, a main theme of this conference, has been born. It is said that the Dutch word "landschap" has migrated over the grey North Sea together with the paintings of Adriaen van de Venne, Hendrick Avercamp, Jan van Goyen, Pieter Molijn, Salomon en Jacob van Rui(y)sdael, Aelbert Cuyp, Meindert Hobbema, Philips Koninck, Jan Hacxkaert, ... and

of many, many other colleagues, Dutch landscape painters even also Paulus Potter, and Rembrandt himself. That happened in the 17th century, the period that in Holland is called the "Golden Age" when the at that time about one million counting Dutch population also had some other influences on the world, and it is likely that King William of Orange and his wife Mary also contributed to make that word current "en passant" introducing the Dutch garden art and the Dutch type of parliament into the British spheres.

(The latter is in fact derived from the "watershaps"-rule, an old democratic system of ruling the land, then subdivided into "waterschappen" comprising polders and waarden. These are a special form of landscapes delineated by a combination of administrative, technical and natural boundaries by the local inhabitants that only by voluntary cooperation could be effectively defended against the common enemy: the water from sea, river and marches.)

Before that time the English speaking peoples had only words as "land" and "scenery" available to indicate in general that what we are going to deal with at this conference. The concept of what we now call "landscape" however, must

have existed already in those days. Because there were hunters, gatherers, herdsmen and farmers, depending on the various types of land that formed their environment and of which many of those guys had a profound local knowledge of and also many local toponyms.

It was this type of knowledge that for the first time got the interest of scientists through early geographers as von Humboldt, who is said to have characterized such prescientific recognized units of land (and their hierarchical wholes on larger and smaller scale) as "Landschaft", as "Das total Charakter einer Erdegegend". Later geography lost its early holistic character and gave rise to the most successful disciplines as geology, geomorphology, regional soil science at the physical side and human geographical disciplines at the human side of the "Total Charakter" of the "Erdegegend"s studied.

The last half a century however it was discovered both in the physical, the biological and human sciences as well as in philosophy that there is a need to not only indulge further into analyses and research for causality, but also to consider wholes and to look for functionality. The book of Smuts on holism and the general systems theory of von

Bertalanffy played a role here. Carl Troll gave an impetus for introduction of these ideas into also the concept of land and landscape.

I do not need to go into details here, certainly during the congress several speakers, for instance our good friend Zev Naveh and also my brother, have prepared to deal with this subject.

I only want at the beginning of this conference to put you on the right leg. As Past-President and as such still member of the Executive Committee of the International Association for Landscape Ecology (IALE), I got quite some experience with this type of happenings under the heading of the term "landscape".

I just mentioned the origin of this word already partly. The full story as taught to me by Schmidthuesen is that the German term "Landschaft" (as most probably also the Dutch term "landschap") in the early Middle Ages and earlier, meant nothing else than a piece of land, an area, I would say, in the meaning of the Greek "chore". This indicates only how it and its boundaries is situated in space, hence "where it is". Through the activity of art however, say around the time of Albrecht Dürer, that term got (just as the before only with portraits

filled frames of the earlier painters) a land content, it became gradually something in the meaning of the Greek term "topos": the area and its content, not only the "where it is" but also the "what it is".

So gradually the term landscape got the meaning of what later von Humboldt would call "The total character of a piece of the earth". Still later, after introduction of system thinking into land sciences, this developed into "the system at the earth surface of biotic and abiotic forces, that visually can be recognized" hence "land as a tangible ecosystem".

In the meantime, parallel to soil science and related land survey activities, developed disciplines as "land-evaluation" and concepts as "landsystem, landunit and landfacet". There the term "land" appears to have an almost identical meaning as landscape as described by me before, although the one pure agronomist may have a somewhat stronger bias to real farmers land than others, who use land evaluation also in the urban and the more natural sphere. In the context of IALE, in whose name I am speaking this morning, this term "land" and the before described term landscape are now almost identical.

But now I see and feel certain landscape philosophers, artists, maybe even also certain landscape architects and some biologists becoming a bit uneasy ....

"Dear Sir, ... they think": Landscape is in our profession in the first place that what I observe around me, that influences my mood. It is composed out of natural forms and artifacts, there are coulisses and the skyline at the horizon in the country side as well as in the cities. "No, ... says another": It is the mosaic, the pattern of patches and corridors connecting ecosystems. Land is not an ecosystem but a complex of many ecosystems, they say, connected with an ecological infrastructure.

And here we are in the middle of the cacophony of ideas.

It is therefore I want to start this conference with a parable in order to enable you to adjust your perception at the right level anyhow the word "landscape" is being used by a new speaker.

The Parable of the Ball:

Once upon a time there was a ball lying on a green lawn. A little boy passed by, discovered with joy the ball gave it a kick and it started rolling. And as little boys do, after some time he had

enough of it and left the ball at the field. Later he told his mother that he had been playing nicely with a ball and he described how round it was and how heavy and all other qualities as a playing toy.

In the meantime an artist passed by. He saw the ball and found it a beautiful form that fitted nicely in the green grass in the corner where it had been coming to stand still. He took his camera made a series of photos and, on the next photo-exposition he won a price.

The ball remained at the spot until a person came along who was looking for a special type of stone. So he cut off a piece made some chemical analyses and found that it was useless, so he left the ball, the place and this story.

Later on a farmers wife passed by, saw the little bit disturbed ball and remembered that she at home had an earthen water storage vessel that needed a lid on the opening. She estimated that the ball would fit exactly the opening so that no dirt and dust could go in. So she took the remnants of the ball, carried it home and since then the ball had a very purpose to keep the water of this house clean.



Finally a thirsty historian happened to pass by the house and got on request some water from the jar. He was delighted to discover in the lid a very rare specimen of a remnant of the manmade cannon-ball from a forgotten ancient war.

Dear audience, ..... tell me: what is a ball?

The boy states since firmly that a ball is a round thing made for rolling and playing with. The stone expert had not even noticed the external form of the piece of stone he found, except that its physiognomy suggested to him something about the internal composition. The artist, when he came back later to show his wife how beautiful the stone was lying in the corner of the grassfield, was annoyed that it was taken away and used for such a profane utilitarian aim as closing a water can. And so was the historian who eventually started a process to get the thing in a museum.

The woman however, who used it for her legal purpose, would never call it a ball but her jar-cover, and would not understand that the stone specialist about the same stone would talk about a useless piece of dolerite he once had seen and thrown away. Neither she would

understand the historian in his plea for an ancient piece of armament.

What, ladies and gentlemen, is the function and definition of a ball?

In this conference certain people will concentrate on the physiognomic side of the landscape concept, others will highlight the mosaic character, some will talk about topological aspects, others about the chore and the relations between them. And all of them are right.

But it is important to interpret in the beginning of each talk whether he/she is the boy, the stone specialist, the historian, the photographer or the farmer's wife.

In one thing however all speakers on a IALE Symposium should be bound together. They will develop their ideas from the common view that what they call land or landscape is a facet of the whole of things and forces at the earth surface that there forms a system. Then it does not matter that the various groups of participants indulge in their own terminology, because everybody from now on at least knows that the landscape of the pure artist and also certain landscape architects is something else than the landscape concept of the land ecologist

who has to judge the sustainability of landuse in a country with an expanding population and that again may differ from the aspect that certain biologist study, the movements of certain animals between the various mosaic elements that together form the landscape seen at a certain scale. All those views together in integration are the core of landscape ecology. At this conference we will pay special attention to the cultural aspects of the landscape. Some of you may even state that one can only speak of landscape if there are cultural elements in it. But even in this, in the IALE context of landscape ecological thinking, too one sided view, there is an acceptance of the crucial narrow connection between cultural, biotic and abiotic aspects. Therefore it contributes to real landscape ecological reasoning.

Ladies and Gentlemen,

IALE welcomes the initiative of the organizers of this conference, Hanna Swouden-Svobodova and Josef Fanta for their initiative to have a working group on cultural aspects of landscape. This conference is a first activity of that IALE-working group. We hope that it will be the start of an intensive centre of scientific activity.

So we are looking forward to an instructive week for all of us. On behalf of IALE I wish you a pleasant and fruitful conference.

#### Hungarian IALE organize International Conference

The Hungarian National Section of IALE invites to an international conference on the theme:

*Possibilities and main fields of the practical application of landscape ecology.*

The conference will take place Oct.1-5 1990 in Noszvaj Village, some 15 km from Eger in northern Hungary.

Fees: Registration 1100 Ft, Accommodation 1800 Ft, Meals 1100 Ft, Excursion 200 Ft.

Official languages will be English and German.

Registration, including a preliminary title of a paper/poster should be forwarded to

Prof. Zoltán Pinchrés  
Kossuth Lajos University  
H-4010 Debrecen, Box 9  
HUNGARY

not later than 31. January 1990.

Abstracts (2 pages) of papers and posters will be published, and should be forwarded before 30. April 1990.

## REGIONS

### THE CHINESE IALE IN PROGRESS

On the initiative of IALE's contact person in the Peoples Republic of China, Prof. Xiao Duning, Institute of Applied Ecology by Academia Sinica in Shenyang, a Chinese IALE, Chinese Association for Landscape Ecology (CALE), has been founded.

On Oct. 6 to 8, Prof. Duning arranged the First Symposium of Landscape Ecology in China, which was joined by scientists from 45 universities and institutes covering 24 provinces and big cities in all main regions of China. Senior scientists as well as young generations within geography, ecology, forestry and other related areas were discussing 70 scientific papers and research reports, which will be published in 1990.

During the symposium an executive committee, a secretariat, and a council of 31 members for CALE was elected and four major special working groups were organized.

As President for the new Society was elected

Prof. Lin Chao.

He will be supported by the following five Vice Presidents:

Prof. Chen Changdu (Beijing University),  
Jin Guihe (North-East Teacher University in Changchun),  
Nu Wenyan (Beijing Ecological Environment Center), and  
Dong Yawen (The Institute of Lake Geography in Nanjing)

The secretariat of the society will be placed at the Institute of Applied Ecology, Academia Sinica, P.O. Box 417, Shenyang, China, with Prof. Xiao Duning as Secretary General.

For the four working groups the following contact persons were elected:

1. Group for nature protection. Contact person: Prof. Chen Changdu (Beijing University).
2. Group for landscape planning and construction. Contact person: Prof. Jing Guihe (North-East Teacher University in Changchun).
3. GIS and computer modelling. Contact person: Su Wengui (Institute of Applied Ecology, Academia Sinica, Shenyang).
4. Urban ecology and landscape aesthetics. Contact person: Wang Jie (Beijing Association for Environment).

It was decided to arrange the next symposium in the beginning of 1991, and to use that symposium as a preparation for the participation in the next inter-

national IALE Seminar in Canada, August 1991.

Jesper Brandt

#### REGIONAL ORGANIZATION IN ITALY

An Italian Society for Landscape Ecology has been founded by three Italian members of IALE: Almo Farina, Laboratory of Landscape Ecology at the Lunigiana Museum of Natural History in Aulla, Gianumberto Caravello, Istituto di Ingiene in Padova, and Vittorio Ingegno-  
li, Milano.

The society has about 30 members, and is in rapid progress. Almost all Italian members of IALE has joined the new Society, which is expected to be affiliated IALE as a regional organization in the near future.

Persident for the new society is  
Dr. Almo Farina  
Laboratory of Landscape Ecology  
Lunigiana Museum of Natural History  
Fortezza delle Brunella  
I-54011 AULLA (MS)  
ITALY.

Jesper Brandt

#### NORDIC IALE

On a meeting among IALE representatatives from the Scandinavian countries in May 1989, plans for further landscape ecological cooperation within the Nordic countries were prepared.

Beside plans for the next years activities (seminars, working groups), proposals for statutes, coordination with other relevant Nordic societies, and landscape ecological cooperations around the Baltic were discussed.

A budget for a Nordic landscape ecological journal was prepared.

As secretary for Nordic IALE

Dr. Wolfgang Cramer  
Geographical Institute  
University of Trondheim  
N-7055 Dragvoll

NORWAY

Tel: +47-7-920411 ext. 358  
E-Mail: W\_CRAMER AVH.UNIT.UNINETT  
(ean, bitnet),

was elected.

Jesper Brandt

**GDR-sektion of IALE under preparation**

A section of IALE in the German Democratic Republic is under preparation. A preliminary Secretariat comprising Prof. Hans Richter, Doz. Dr. Bernd Reuter and Doz. Dr. Günther Schönfelder from the Geographical Institute, Martin-Luther-University Halle-Wittenberg, has been set up. Contact person for the GDR will be

Doz. Dr. Bernd Reuter  
Sektion Geographie  
Martin-Luther-Universität  
Halle-Wittenberg  
Domstraße 5  
DDR-4020 Halle (Saale)  
German Democratic Republic

**REGIONAL CONTACTS OF IALE****AUSTRALIA:**

Dr. G.W. Arnold  
CSIRO Division of Wildlife and  
Rangelands Reserves  
Locked Bag no 4.  
P.O. Midland 6056  
Western Australia

**AUSTRIA**

Univ. Prof. Dr. Hubert Nagl  
Universität Wien  
Institut für Geographie  
Fachgebiet Landschaftsökologie  
Universitätsstraße 7  
A-1010 Wien

**BELGIUM**

Drs G. Larnoe  
Laboratorium voor Regionale  
Geografie en Landschapskunde  
Rijksuniversiteit Gent  
Krijgslaan 281 S8-A1  
B-9000 Gent

**BULGARIA**

Dr. Jekaterina Pavlova  
Naucnyj centr po ochrane prirodnej  
sredy i vodnych resursov  
ul. Industrialna 7  
Sofia

**CANADA**

Rubec, Clayton  
Canadian Society for Landscape  
Ecology and Management  
c/o Sustainable Development Branch  
Environment Canada  
Ottawa, KIA OH3

**CHILE**

Dr. E.R. Fuentes,  
Fac. de Ciencias Biologicas  
Universidad Catolica de Chile  
Casilla 114-D  
Santiago

**CHINA**

Vice-director Prof. Xiao Duning  
Institute of Applied Ecology  
Academia Sinica  
P.O.Box 417  
Shenyang

**CSSR**

Dr. Mária Kozová,  
Inst. of Exp. Biology and Ecology  
Obrancov Mieru 3  
81434 Bratislava

**DENMARK**

Dr. J. Brandt,  
Roskilde University Centre  
House 19.2  
P.O. Box 260  
DK- 4000 Roskilde

**FINLAND**

Doc. Dr. Osmo Kontturi,  
Finnish Association for  
Landscape Ecology r.y.  
P.O.B. 381  
SF-80101 Joensuu



## FEDERAL REPUBLIC OF GERMANY (FRG)

Prof. Dr. K.F. Schreiber,  
Institut für Geographie der  
Westfälischen Wilhelms-Universität  
Robert Kochstrasse 26  
D- 4400 Münster

## FRANCE

Dr. Françoise Burel,  
Muséum national d'histoire nat.  
Laboratoire d'évolution des systèmes  
naturels et modifiés  
Avenue du Général Leclerc  
F-35042 RENNES Cédex

## GERMAN DEMOCRATIC REPUBLIC (GDR)

Doz. Dr. Bernd Reuter,  
Sektion Geographi  
Martin-Luther-Universität  
Halle-Wittenberg  
Domstraße 5  
DDR-4020 Halle (Saale)  
German Democratic Republic

## GUATEMALA

Mrs. L. Alegria Rubio,  
c/o Hesse, 1  
5 Ave. 'A' 19-25  
zona 13 Guatemala City

## HUNGARIA

Dr. P. Csorba,  
The Geographical Institute  
Lajos Kossuth University  
H-4010 Debrechen

## INDIA

Prof. Dr. Majid Husain,  
Dep. of Geography  
Jamia Millia Islamia  
New Delhi - 110025

## ISRAEL

Prof. Emeritus Dr. Zev Naveh,  
Fac. of Agric. Engineering Technicon  
Israel Institute of Technology  
Haifa 32000

## ITALIEN

Dr. Almo Farina,  
Lab. di Ecologia del Paesaggio  
c/o Museo di storia Natural della Lunigiana  
Fortezza delle Brunella  
I-54011 AULLA (MS)

## THE NETHERLANDS

Drs. Claire C. Vos,  
WLO-Secretariat  
P.O. Box 9201  
NL-6800 HB Arnhem

## NIGERIA

Prof. J.O. Adejuwon  
Department of Geography  
University of Ife  
Ile-Ife

## NORGE

Dr. Wolfgang Cramer,  
Geografisk Institut  
Trondheim Universitet  
N.7055 Dragvoll

## PERU

Dr. C.Z. Jimeno,  
Of. Nac. d. Evaluacion d. Rec. Nat.  
Calle Diecisiete 355  
Urb. El Palomar - San Isidro, Ap. 4992  
Lima

## POLAND

Prof. T. Bartkowski,  
Institute of Physical Geography  
A. Mickiewicz University  
Dolna Wilda 34  
61552 Poznan

## REPUBLIC OF SOUTH AFRICA

Dr. O. Kerfoot,  
University of Witwatersrand  
1 Jan Smuts Ave  
Johannesburg 2001

## SOVIET UNION (USSR)

Lebedeva, Dr. N.  
Institut Gegrafii AN SSR  
Staromonetnyi 29  
Moscow 109017

## SWEDEN

Dr. Margareta Ihse,  
Department of Physical Geography  
University of Stockholm  
S -106 91 Stockholm

## SWITZERLAND

Dr. G. Thelin,  
Swiss Ass. for Applied Geography  
Lindenrain 8  
CH-3038 Kirchlindach

## THAILAND

Mrs. Parida Kuneepong,  
Department of Land Development  
Bangkhen  
Bangkok 10900

## UNITED KINGDOM

Dr. R.G.H. Bunce,  
Institute of Terrestrial Ecology  
Merlewood Research Station  
Cumbria LA11 6JU

## UNITED STATES OF AMERICA

Dr. James F. Thorne,  
University of Pennsylvania  
Dept. of Landscape Architecture  
and Regional Planning  
Philadelphia, PA 19104-6311

## IALE SECRETARIAT

Dr. Jesper Brandt  
Roskilde University Centre  
P.O. Box 260  
DK-4000 Roskilde  
DENMARK

## WORKING GROUPS

IALE members interested in joining a working group should write directly to the contact person.

## 1. ECOLOGICAL INFRASTRUCTURE

Dr. P.F.M. Opdam  
Research Institute for  
Nature Management  
P.O. Box 46  
3956 ZR Leersum  
The Netherlands.

Drs. A.F. van de Klundert  
Rijksplanologische Dienst  
Willem Witsenplein 6  
2594 BK Den Haag  
The Netherlands.

## 2. LANDSCAPE ECOLOGY OF AGRO-ECOSYSTEMS

Dr. H. Gulinck  
Universiteit Leuven  
Faculteit der Landbouwwetenschappen  
Kardinaal Mercierlaan 92  
3030 Leuven  
Belgium.

## 3. ECOLOGY OF THE RHINE CATCHMENT AREA

Drs. R.H.G. Jongman  
Dept. of Physical and Rural Planning  
Agricultural University  
Gen. Foulkesweg 13  
6703 BJ Wageningen  
The Netherlands.

## 4. COASTAL MANAGEMENT

Drs. J. Visser  
Rijkswaterstaat Deltadienst  
Environmental Division  
Postbus 439  
4330 AK Middelburg  
The Netherlands.

## 5. URBAN ECOLOGY

Prof. T. Bartkowski  
Institute of Physical Geography  
A. Mickiewicz University  
ul. Dolna Wilda 34 A.m. 9  
61 552 Poznan  
Poland.

## 6. GEOGRAPHICAL INFORMATION SYSTEMS

Dr. Dick van der Zee  
ITC  
350 Boulevard 1945

P.O. Box 6  
7500 AA Enschede  
The Netherlands.

## 7. ECOLOGY OF THE DANUBIAN CATCHMENT AREA

Prof. H. Marinov  
Danubian Laboratory and Laboratory  
of Ecology  
HIFE "D.A. Tsenov" - 5250 Svishtov  
Bulgaria.

## 8. DESERT ECOLOGY

Dr. Linda Olsvig-Whittaker  
Mitrani Center of Desert Research  
Ben Gurion University of the Negev  
Sde Boqer Campus  
Israel 84 990.

## 9. CULTURAL ECOLOGY

Hanna Svobodova  
Prof. Dr. J. Fanta  
Department of Landscape Ecology  
University of Amsterdam  
Dapperstraat 115  
1093 BS Amsterdam  
The Netherlands.

REPORT ON A CONFERENCE HELD AT  
BUSSELTON, WESTERN AUSTRALIA,  
SEPTEMBER 1989

NATURE CONSERVATION: THE ROLE OF  
CORRIDORS by R.J. HOBBS<sup>1</sup>, B.M.J. HUSSEY<sup>2</sup>  
& D.A. SAUNDERS<sup>1</sup>

<sup>1</sup>CSIRO, Division of Wildlife and  
Ecology, LMB 4, P.O. Midland, Western  
Australia 6056

<sup>2</sup>Roadside Conservation Committee, P.O.  
Box 104, Como, Western Australia 6152.

In many parts of the world, human activities have resulted in fragmentation of the natural landscape, leaving only small remnants of the original ecosystems. These remnant areas now constitute the only resource available for conserving the natural biota. A major question facing conservation biologists has been whether linkages or corridors between remnants enhance the overall conservation value of a region by facilitating movement of the biota.

The values of corridors and the problems of managing linear remnants were discussed at a recent conference entitled "Nature Conservation: the Role of Corridors", convened at Busselton, Western Australia on 11-15 September 1989 by the Commonwealth Scientific and Industrial

Research Organization, the W.A., Department of Conservation and Land Management, the W.A. Main Roads Department and the W.A. Roadside Conservation Committee. The conference was attended by research workers, managers and concerned lay people from Australia, Belgium, Canada, New Zealand, South Africa and USA: The proceedings of the conference will be published by Surrey-Beatty, Sydney during 1990.

Large parks and reserves are the backbone of any conservation system, but they cannot be considered or managed in isolation. Conservation must therefore be set in a regional perspective by developing systems or networks of habitat patches connected by corridors which facilitate movement of the biota. The connectivity is essential to ensure dispersal and recolonisation, and hence gene flow, and ensure the maintenance of what otherwise might be small, isolated populations.

Corridors can occur as natural parts of the landscape, such as rivers and associated riparian vegetation, or can be artefacts occurring along roads, railways, fencelines or powerlines. Such corridors are in effect linear remnants left following the clearing of the adjacent landscape. They have considerable

value as they often constitute a significant proportion of the remnant vegetation in a region and provide habitat for some components of the fauna. In some cases endangered plant species occur only on the strips. Management of these linear remnants is, however, often very difficult because they have a large edge to area ratio and are subject to numerous disturbances originating in the surrounding matrix. Corridor dynamics are dominated by external rather than internal influences unless they are wide enough for there to be an "interior" portion which is uninfluenced by edge effects. Edge effects include physical and chemical effects such as increased insolation and wind damage, inputs of nutrients, herbicides and pesticides, and biotic effects such as invasion by weedy species or pathogens and increased predation and mortality. For example, on corridors lining transport routes, significant mortality is caused by motor vehicles.

The importance of corridors in facilitating movement of biota has until now been assumed, without much unequivocal data to back the assumption. Studies reported at the conference are now providing data that indicate that corridors do in fact have a vital role to play in the movement of components of the fauna. The

attributes which are important in corridor design are, however, likely to be taxon-specific, and hence a single corridor may not be effective for all components of the biota. Species using corridors may be predominantly weedy species which are capable of movement in any case. Under certain conditions a corridor could act as a sink or "death-trap" in which dispersing individuals could be more likely to suffer mortality, e.g. through predation.

Corridors also have other functions apart from providing habitat and movement conduits. They can serve as shelterbelts which increase crop and livestock productivity and ameliorate wind and water erosion. Corridors, especially along roadsides, are the window through which tourists and the travelling public look at the landscape, and so they have a vital role in education and increasing public awareness of nature conservation issues.

Research priorities include the establishment of regional inventories to determine the location and condition of existing corridors, and the development of management techniques which will maintain corridor values. Monitoring of corridor quality is also essential, as is the integration of research and mana-

gement. Rehabilitation techniques are also required which will allow the developemnt and restoration of corridor networks. Further detailed research on faunal movement and the requirements of individual species is also vital if corridors allowing biotic movement are to be provided.

The conference stressed the importance of communicaiton with the general public and politicians about issues related with corridors and conservation in general, and reiterated the need for scientists to spend a significant part of their time (say 10%) doing this. For conservation to be successful, it has to involve everyone, not just a select few.

#### INVITATION TO JOIN A WORKING PARTY

The International Union of Forest Research Organizations (IUFRO) has recently established a working party "Landscape Ecology" as a part of the subject group "Ecosystems" under IUFRO.

The main objective for the working party is to promote the knowledge of forest as a landscape constituent, and to coordinate the related basic and applied research - in accordance with the base IUFRO policy to cover all the important aspects of man-forest relations.

IUFRO are fully aware of the existencet of other associations dealing with landscape ecology but believe that there is no danger of overlapping activities. The field of work of these organizers, IUFRO feel, is either too broad or too specialized to fully satisfy the rather specific needs of forestry.

Principal aims and objectives for the working party are:

- to promote and coordinate the interdisciplinary landscape ecological research among foresters as well as experts from related fields



- to promote the awareness of the significance of forests as landscape constituents
- to initiate a research programme concretely dealing with the study of e.g.:
  - a) natural and historical reasons for the present forest distribution patterns
  - b) ecological consequences of the existing distribution patterns of the forest
  - c) environmental (in the broadcast sense of meaning) functions of the forests in the landscape
  - d) role of forests in the flows of matter and/or energy in various landscape types
  - e) interactions between forest and other (natural, seminatural or artificial) ecosystems in a given landscape
  - f) new management strategies for future forests in the landscapes that changed recently and will change furthermore, due to radical changes in agriculture (relaxation, abandonment).
  - g) criteria for the allocation of (new) forests in the landscapes that changed recently and will change furthermore, due to radical changes in agriculture (relaxation, abandonment).

The working party "Landscape Ecology" is led by dr. Bostjan Anka, ass.prof. of Landscape Ecology at the Forestry Department, Biotechnical Faculty, Ljubljana, and by dr. Willem Vos, head of the forestry division of the "De Dorschkamp" Research Institute for Forestry and the Landscape Planning in Wageningen, Holland, who is acting as a co-chariman.

If you are interested in joining our working party, you are kindly invited to contact either dr. Bostjan Anka, Biotechnical Faculty, Forestry Department, Krekov trg 1, 61000 Ljubljana, Yugoslavia or dr. Willem Vos "De Dorschkamp" Research Institute for Forestry and Landscape Planning, Bosrandweg 20, NL-6700 AH Wageningen, the Netherlands.

V<sup>T</sup>H INTERNATIONAL CONGRESS OF ECOLOGY  
INTECOL-1990

Theme: "Development of Ecological Perspectives for the 21st Century"

The second circular calling for papers and applications for attendance has already been send out months ago.

The entire programme will be structured around the three ecological emphases: (1) Future perspectives in ecology, (2) Ecology and human activities, and (3)

Ecology in Asia. After an introductory morning session, symposium sessions will be held in about 20 congress rooms.

Deadlines for the preparations are given as follows:

December 1 1989: Offer your scientific contribution and present abstract of your paper (Form B)

December 1 1989: State your interest in attending Symposia (Form C)

December 1 1989: State your wishes of accommodations and attending accompanying person's programmes, scientific visits and excursions (Form D)

February 15 1990: Advance payment of registration fee for persons from abroad (Form A)

(August 31 1989): Advance payment of registration fee for persons residing in Japan (Form A).

For further information contact:

Secretariat of INTECOL 1990

c/o Inter Group Corp.

Akasaka Yamakatsu Bldg., 8-5-32

Akasaka, Minato-ku, Tokyo, 107 Japan

Phone: 03-479-5326

Facsimile: 03-479-2475

Telex: 02425181 IGC J

Cable: INTERCONFER TOKYO

## NEW PUBLICATION

Baily, Robert G., 1988:

*Ecogrographic analysis: A guide to the ecological division of land for resource management.*

Misc. Publ. 1465. Washington, DC:

U.S. Department of Agriculture. 18 p.

Ecological units of different sizes for predictive modeling of resource productivity and ecological response to management need to be identified and mapped. A set of criteria for subdividing a landscape into ecosystem units of different sizes is presented, based on differences in factors important in differentiating ecosystems at varying scales in a hierarchy. Practical applications of such units are discussed.

Keywords: ecological land classification, landscape ecology, scale, ecosystem mapping, resource planning model.

Inquires should be addressed to:

Public Affairs Office-Publications

USA Forest Service, P.O. Box 96090

Washington DC 20090.

## DIARY

- Arizona State  
15-17 Febr. 1990  
Symposium Landscape Ecology: Planning and Design Implications  
Contact: Edward A. Cook, Joan Hirschman, Department of Planning,  
College of Architecture and Environmental Design, Arizona State  
University, Tempe, AZ 85287; tel. (602) 965-7167.
- Denver, USA  
16-21 March 1990  
Wildlife Management Institute: 55th North American Wildlife and  
Natural Resources Conference.  
Contact: Wildlife Management Institut, 1101 14th Street, Suite  
725, N.W., Washington, D.C. 20005; tel. (292) 371-1808.
- Vancouver,  
British Columbia  
4-6 May 1990  
University of British Columbia Campus, Vancouver, British  
Columbia: Canadian Workshop Symposium on Landscape Approaches to  
Wildlife and Ecosystem Management.  
Contacts: Prof. Brent Ingram, Landscape Architecture Program,  
Depts. of Plant Science and Forest Resources Management, 344-2357  
Main Mall, University of British Columbia, Vancouver, B.C., V6T  
2A2, Canada, phone (604) 228-5271, fax (604) 228-6394 and Mr.  
Clayton Rubec CSLEM Secretariat, Sustainable Development, Environ-  
ment Canada, Ottawa, Ontario, K1A 0H3, Canada, phone (819) 953-  
1477, fax (819) 997-0547.
- Oxford, OH, USA  
21-24 March 1990  
5th Annual Landscape Ecology Symposium.  
Contact: Dr. John L. Vankat, Department of Botany, Miami Univer-  
sity, Oxford, OH 45056, USA.
- Hempstead, NY, USA  
7-9 June 1990  
Hofstra University: Interdisciplinary Conference: "The Environ-  
ment: Global Problems, Local Solutions".  
Contact: Conference Coordinator, Hofstra Cultural Center, Hofstra  
University, Hempstead, N.Y. 11550, USA; tel. (516) 560-5669, 5670.
- Aberdeen, UK  
8-21 July 1990  
Centre for Environmental Management and Planning, Aberdeen  
University: 11th International Seminar on Environmental Impact  
Assessment.  
Contact: CEMP, 48 College Bounds, Old Aberdeen AB9 1FX, Scotland,  
UK; phone 0224 - 27 24 80, telex 73458 UNIABN G; telefax 0224  
4871658.
- Kobe, Japan  
3-6 Aug. 1990  
Science Council of Japan: International Conference on the Environ-  
mental Management of enclosed Coastal Seas '90 (EMECS).  
Contact: Secretariat, EMECS Executive Committee, 10-1, 5-chome,  
Shimoyamate-dori, Chuo-ku, Kobe 650, Japan; tel. (078) 341-7711,  
ext. 4115, 4113; fax (078) 371-4354.
- Kyoto, Japan  
12-18 Aug. 1990  
International Society of Soil Science (ISSS): 14th Congress and  
symposium on "Global Soil Changes and their Dynamics in a Changing  
Environment".  
Contact: ISSS, c/o ISRIC, 9 Duivendaal, P.O. Box 353, 6700 AJ  
Wageningen, The Netherlands; tel. (31) 8370-19063; fax (31) 8370-  
24460.
- Hangzhou, China  
5-9 Sept. 1990  
(prov.)  
Chinese Research Academy of Environmental Sciences (CRAES) and  
International Lake Environmental Committee Foundation: Fourth  
International Conference on the Conservation and Management of  
Lakes "Hangzhou '90", co-sponsored by UNEP, Environment Protection  
Agency of China and International Water Resources Association.  
Contact: "Hangzhou '90". Preparatory Committee, Foreign Affairs  
Office, CRAES, Belyuan, Anwai, Beijing, People's Republic of  
China; phone 421 1025, telex 22505 BOOTH CN.

Noszvaj Village  
Hungary  
1-5 Oct. 1990

An international Conference will be organized by the Hungarian Section of the International Association for Landscape Ecology, IALE: Possibilities and Main Fields of the Practical Application of Landscape Ecology.

Mailing Address: Prof. Zoltán Pinczés, Kossuth L. University, H-4010 Debrecen, Box 9,

CSSR  
1990

International Symposium on Landscape Synthesis, IGU, Smolenice Castle, CSSR.

Contact: Prof., Dr. E. Mazur or Prof., Dr. H.. Moss, University of Quelp, Dept. of Geography, Ontario, N16 2Wq, Canada.

## REGIONAL INFORMATION

**iale**

**International Association for Landscape Ecology**

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