
iale

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bulletin**International Association for Landscape Ecology**

EDITORIAL

The very successful IALE-seminar in Münster (FRG) with the theme "Connectivity in Landscape Ecology" already lies half a year behind us. We - the editors - apologize for the fact that you had to wait quite a long time again before receiving a next Bulletin. The reason for this is that the international IALE-secretariat still does not have the financial means to hire staff, not even part-time. So, for the time being, we have to squeeze the production of the Bulletin in between our normal work which, as you may understand, sometimes has priority. We ask for your consideration.

In this Bulletin you will find reports of several IALE-meetings which took

place in Münster. As you will see, one of the main topics is the appointment of the Council of IALE in 1988. Further, information is given on international IALE meetings in 1988 (Czechoslovakia), 1990 (Japan) and 1991 (Canada) as well as on different Working Groups. A new IALE Working Group "Cultural aspects of Landscape Ecology" is announced.

As always we conclude this short introduction with the remark that we welcome your contributions, comments and information for the next Bulletin.

With best wishes for a good 1988,

S.M. Ten Houte De Lange

W.B. Harms

IALE INFORMATION

During the 2nd International Seminar of IALE in Münster (FRG) in July 1987, several IALE-meetings have been held.

EXECUTIVE COMMITTEE MEETING, JULY 1987

A meeting of the Executive committee of IALE took place in Münster, FRG, on July

20, 1987. At this meeting all members of the Executive Committee, except the treasurer, were present. The president of IALE, Dr. Zonneveld, opened the meeting and reported on his visits to a meeting in Israel, where he took part in the establishment of the IALE Working Group on Desert Ecology, and to Canada, where he addressed the First Symposium of the Canadian Society for Landscape

Ecology and Management, held in Guelph in May 1987.

The Committee discussed the need to establish the Council of IALE as soon as possible. The Committee decided to invite representatives of active IALE Regions and active Working Groups present at the Seminar for a first preliminary Council meeting in order to propose a procedure for the formal appointment of the Council according to the Statutes of IALE.

Other points discussed by the Executive Committee were the finances of IALE, the new international journal Landscape Ecology and the proceedings for the Münster Seminar.

Because of the absence of the treasurer, it was decided that the international IALE-secretariat should provide a financial report as soon as possible and prepare a draft budget for IALE for the next few years.

The Executive Committee encourages the initiative to organize summer courses in Landscape Ecology. Such courses - under the umbrella of IALE - should preferably be held in different parts of the world.

The Executive Committee expressed the opinion that the establishment of the Council of IALE will also be a good moment to appoint a new Executive Committee, and decided to propose this to the General Assembly.

PRELIMINARY COUNCIL MEETING, JULY 1987

This meeting took place on July 21, 1987, and was attended by the Executive Committee of IALE as well as representatives of active Regions and of active Working Groups who were present at the Seminar.

The following procedure for the appointment of the Council was proposed by the Executive Committee and adopted by the meeting:

1. To formalize the Regions by first asking these to inform the secretary-general about their present status of organization, the existence of a regional secretariat, of by-laws, etc.
Based on this information Regions can be either officially admitted by IALE or asked to improve their organization
2. To ask the formalized regions to appoint a representative as member of the Council.
3. To ask the active Working Groups to appoint chairmen. Chairmen of Working Groups are member of the Council of IALE according to the Statutes.

The Executive Committee expressed the wish to retire in 1988. According to the Statutes the Executive Committee has to be appointed by the Council. In order to facilitate the procedure for the appointment of a new Executive Committee, the meeting asked a group of three IALE members to prepare a list of possible

new members for the Executive Committee, by consulting the IALE members present at the Seminar. This list will be used by the International Secretariat to organize the election of a new Executive Committee. This election will be performed by mail by the Council once this has been officially appointed in the first half of 1988.

It was further decided that the Executive Committee of this moment will be replaced by the new one during the next General Assembly, to be held in October 1988 at the International Symposium in Czechoslovakia.

The meeting of the preliminary Council discussed the financial situation of IALE but reached no conclusion concerning dues etc., because of the absence of the financial report of the treasurer. A good financial report shall be presented in time before the meeting of the General Assembly in 1988.

The Editor-in-chief of the new journal Landscape Ecology, dr. Golley expressed his concern about the fact that all lectures of the IALE seminars are usually published in proceedings. This means that many interesting papers cannot be published in the journal. A solution to this problem is that a selection of seminar-papers is not included in the proceedings, but published in the journal instead. It was decided that both editors of proceedings and journal should try to find an agreement in this

direction.

Dr. Forman, as vice-president, put forward the idea to present awards within the framework of IALE. Such awards could for example be given to the author of the best presentation in a certain field of Landscape Ecology. The meeting decided that the secretary-general should organize a small group of IALE members to work out this idea.

Several members of the meeting made suggestions concerning the organization and structure of the IALE-seminars. One idea was that in future Working Groups organize (a part of) the seminars.

IALE GENERAL ASSEMBLY, JULY 1987

The third General Assembly of IALE was held on July 22, 1987 in Münster (FRG). After the opening speech by the president of IALE, who especially thanked Prof. Schreiber and his staff for the excellent organization of the Seminar and for their hospitality in Münster, the Secretary-general reported on recent developments within IALE. Afterwards the proposed procedures for the appointment of the Council and of the new Executive Committee in 1988 were presented. The meeting adopted these procedures.

Representatives of the different Regions of IALE reported on recent developments. An overview of the present situation in the different Regions will be given in the next Bulletin.

The Canadian Society for Landscape Ecology and Management - in the person of our vice president Dr. H.G. Merriam - invited IALE to hold the third International Seminar in Ottawa Canada in the summer of 1991. The meeting was very happy with this opportunity to have a IALE-seminar in the New World and gladly accepted the invitation. A proposal for a theme is found in this Bulletin.

The president of INTECOL, Dr. F.B. Golley, officially invited IALE to make a contribution to the Vth International Congress of Ecology, to be held in August 1990 in Yokohama, Japan.

An interesting suggestion for such a contribution was recently sent to the President of IALE by Prof. E.r. Fuentes from the University of Santiago (Chile). He points out that problems of landscape ecology in developing and developed countries are somewhat different. Especially for developing countries landscape ecology could play an important role by describing patterns, indicating misuses, zonation, etc. He further writes that "It would be extremely interesting to have a set of four or five landscape ecologists that could point towards the problems as they appear in some key-areas, with the aim of obtaining some generalizations that could help guide further research." and that "mountainous landscapes in tropical (Africa, Asia) and subtropical (L. America) areas, lowland tropical forest areas (L. America, Africa) and sub-tropical

steppes (Africa, L. America) provide a handful of themes of wide enough interest."

(Any opinions or reactions to this suggestion are welcome by the Editors of the Bulletin).

Our vice-president Dr. Ruzicka announced that the next international meeting of IALE will be the VIIIth International Symposium on problems of Landscape Ecological Research in Czechoslovakia in October 1988.

ANNOUNCEMENT FROM THE SECRETARY-GENERAL

In order to formalize the IALE-Regions within the first half of the next year all contact persons of IALE and/or regional secretariats will soon receive a letter requesting information about the present situation in the respective country or countries. This information should include organization, existence of a regional secretariat, possible by-laws of regional societies, number of IALE members and an up-to-date membership list.

It would be very helpful if all contact persons could respond as soon as possible.

IALE WORKING GROUPS

WORKING GROUP "AGRO-ECOSYSTEMS"

The working group on landscape-ecological aspects of Agro-ecosystems started its work in 1985 after the IALE-seminar in Roskilde (Denmark). Up to 1987 the working group functioned at a minor level but the Münster-seminar played a catalytic role. The number of members increased and in two meetings several future tasks were outlined:

1. To make a survey of:
 - Principles on theory and application in agriculture
 - Scientists, institutes and research projects explicitly or implicitly dealing with landscape ecology in agro-ecosystems
2. To discuss and review:
 - Phenomena that are strongly emerging in agriculture such as: extensification, intensification, marginalisation, overproduction,.... its meaning and relation with respect to landscape-ecology
 - Models concerning changes in agriculture, checking whether these are complete on the landscape level
3. To establish a framework for:
 - Analysing, comparing and linking the many and very diversified existing agro-ecosystems (in the world) from a landscape-ecological point of view
 - Linking agro-ecosystems to other ecosystems
4. To prepare a workshop or a symposium

which could e.g. assess the intensification and extensification policies in relation to a changing economy.

5. To set up a communication-network for the members of the Working Group. At this moment several persons all over the world are invited by the secretary to play a role as regional coordinator for information exchange between the members of the Working Group.

All IALE-members who wish to join the Working Group are hereby invited to contact the central mailing point:

Dr. H. Gulick, Faculteit Landbouw
Kardinaal Mercierlaan 22
B-3030 Leuven, Belgium

WORKING GROUP "ECOLOGICAL INFRASTRUCTURE"

During the IALE-Seminar in Münster, FRG at 22.7.1987 the Working Group had its first meeting. At this meeting, the first newsletter of the Working Group was distributed; it contained progress-reports of several members (Noth, NL; Burel, F; Mader, FRG; Opdam, NL). Unfortunately, the response at the secretaries' request for summaries of current work, lists of publications and research news was rather disappointing.

The meeting was attended by 30 people, and presided by Gray Merriam. About half of the attendants were involved in more or less basic research, the other half in planning activities and other applications of results.

The discussion focussed on the problem

of how to bridge the gap between basic research and application of results. The papers and discussions during the seminar clearly show the great need for basic data concerning the functioning of landscape elements in connecting pieces of habitat on various levels of scale. On the other hand, fairly few groups collect relevant field data, at least compared to the amount of work that should be done. More fundamental research is needed, but at the same time the efficiency of research should be improved. In the next future, the Working Group will discuss the following aspects of this field of research:

1. Needs in basis research: methodology of thinking, research strategies, which species, which types of landscape?
2. General theory: how can theory result on good testable predictions? Is there any coherent theory? Alternative models?
3. How can communications among research people be improved? Should we have coordination of research programs?
4. How can communication between research people and people involved in planning and management be made better?

Discussion groups have been formed to deal with these topics:

- 1.: Opdam, van Amstel, Canters (All NL)
- 2.: McDonnell (USA), Mader (FRG), Agger (DK), Verkaar (NL), Van Selm (NL)

- 3.: Hansson (SW), Merriam (CAN), Wilmers (FRG)
- 4.: Bruns (FRG), Skage (SW), Harms (NL)

Reports will be published in the second newsletter early 1988, to invoke further discussion.

Anyone interested in this discussion is invited to send its name and address to the secretaries:

Drs. B. van de Klundert
 Dr. P. Opdam
 Research Institute for Nature Management
 PO Box 46
 3956 ZR Leersum
 The Netherlands

WORKING GROUP "ECOLOGY OF RHINE CATCHMENT AREA"

The Working Group on the ecology of the Rhine Catchment area had a meeting in Münster during the IALE seminar. During this meeting the relation between the Working Group and the LEARN (Large European Alluvial Rivers network) has been discussed, as well as future activities of the Working Group.

It was decided that it is not necessary for the working group to duplicate the LEARN. The LEARN can coordinate activities and exchange information between scientists in Europe working on alluvial rivers. That means that the IALE Working Group will also use the information bulletin of the LEARN to announce and promote research and activities if

necessary.

Main topic for the IALE Working Group is to stimulate and coordinate landscape ecological research and its application in management and planning in the Rhine catchment area. This can be done by bringing together researchers and policy makers on regional, national and international level. Especially international coordination should be the goal for the IALE-Working Group, because national and regional coordination can easily be handled by national and regional institutes. An international congress on landscape ecology, nature conservation and development in the Rhine catchment area is proposed to start this international coordination in research, management and planning on a landscape ecological base. A small Dutch-German group is working out the proposal. Suggested is to organize such an international meeting in 1989 or 1990.

There is a need for such a meeting, not only for the Rhine, but also for many other large European rivers as for instance the Danube, the Loire and the Rhone. This was stressed on an international symposium at the Auen Institut in Rastatt (Federal Republic of Germany), where the fast ecological deterioration of many European rivers and their floodplains and floodplain forests was discussed.

The co-ordinators of the Rhine catchment area and the Danube catchment area met

at 16 June 1987 in Wageningen. Prof. dr. Marinov confirmed his plan to organize a scientific meeting on the Danube in the next year. In the context of the above mentioned symposium in Rastatt this will be an important meeting, because the Danube seems to be the most threatened river in Europe. Many hydrological and ecological changes are planned; international cooperation is needed to analyse short term and long term effects and if possible to prevent total river deterioration.

R.H.G. Jongman

Agricultural University, dept. of physical planning

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IALE MEMBERSHIP DUES

Please remit your membership dues for 1988 to the regional or international IALE Secretariat.

Annual membership dues are US\$ 5.- for individuals and US\$ 30.- for institutions or libraries.

(See forms in this bulletin).

WORKING GROUP "GEOGRAPHICAL INFORMATION SYSTEMS"

A meeting was held at the Münster seminar. It was decided to hold a workshop

of about 25-30 people at Grange-over-Sands on 24-26 March 1988. The title will be "The application of GIS to ecological planning problems". The meeting will not be advertised openly but is not restricted, so that anyone interested people are invited to contact the chairman directly. Other scientists from outside IALE in Britain and elsewhere will also be invited. The workshop will be interactive with a local problem being set on the first day to compare possible approaches. The latter two days will be used for a rotational group discussion on topics identified or important by participants. Invitations will be sent in autumn.

Dr. R.G.H. Bunce
Institute of Terrestrial Ecology
Merlewood Research Station
Grange-over-Sands
Cumbria LA 11 6JU
England

PROPOSAL FOR A NEW WORKING GROUP "CULTURAL ASPECTS OF LANDSCAPE ECOLOGY"

During the 2nd IALE symposium in Münster, FRG. July 1987, we discussed with some participants the need to establish a new working group within IALE, which would deal with cultural aspects of landscape ecology. The reaction to this proposal was surprisingly positive: it seems there are landscape ecologists who are interested in this subject and in participating in the activities of such working group, feeling that differ-

ent aspects of human culture, both past and present, have had an important bearing on landscape development, land use and landscape planning. These matters have been important research topics within landscape ecology.

In the discussion, the participants emphasized that they experience the lack of a platform where the relations between humanities and landscape ecology could be discussed, as a missing link in our approach to landscape ecological research. Some participants revealed that they are already working on this theme, investigating different aspects of landscape development in its relation to cultural history, aspects of environmental ethics and landscape aesthetics, or are giving lectures on these subjects to their university students.

Encouraged by this positive reaction we propose to establish a new working group within IALE, called:

"CULTURAL ASPECTS OF LANDSCAPE ECOLOGY"

The proposed working group should initiate discussion and research collaboration between the landscape ecologists and scientists working in different fields of humanities. The matters of interest should be:

1. man's relation to nature and landscape as a subject of landscape ecology, human and social sciences, sociology and the philosophy of culture, art and literature;

2. nature and landscape as a theme of art and their perception as a specific sort of information about man's understanding of nature and landscape;
3. aspects of cultural history of landscape, environmental ethics and landscape aesthetics.

By applying this approach within landscape ecology, a deeper insight into landscape as a cultural phenomenon should be achieved.

Our intention is to contact landscape ecologists, sociologists, philosophers, landscape architects and other interested people to organize a workshop as soon as possible, maybe as soon as 1988. During this workshop the functioning of the proposed working group within IALE

could be discussed, results of current research could be presented, etc.

If interested, please contact us. Your participation will be most welcome.

Looking forward to your reaction,

Hanna Svobodová, Josef Fanta

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Dept. of Landscape Ecology

University of Amsterdam

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The Netherlands

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

IALE EXECUTIVE COMMITTEE

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Vice President: R.T.T. Forman (USA)

Vice President: K.F. Schreiber (Fed. Rep. Germany)

Vice President: M. Ruzicka (CSSR)

Sec.-Gen: S.M. ten Houte de Lange (Netherlands)

Deputy Sec.-Gen: W.B. Harms (Netherlands)

Treasurer: F.J.A. Saris (Netherlands)

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

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IALE WORKING GROUPS

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

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2. LANDSCAPE ECOLOGY OF AGRO-ECOSYSTEMS

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5. URBAN ECOLOGY

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6. GEOGRAPHICAL INFORMATION SYSTEMS

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Grange over Sands
Cumbria LA 11 6JU
England

7. ECOLOGY OF THE DANUBIAN CATCHMENT AREA

Prof. H. Marinov
Danubian Laboratory and Laboratory
of Ecology
HIFE 'D.A. Tsenov' - 5250 Svishtov
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8. DESERT ECOLOGY

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Sde Boqer Campus
Israel 84 990

LETTERS TO THE EDITOR

INVITATION TO JOIN THE IUFRO WORKING PARTY "LANDSCAPE ECOLOGY"

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

Its main objective is to promote the knowledge of forest as a landscape element and to coordinate the related basic and applied research - according to the basic IUFRO policy to cover all important aspects of man-forest relations.

We are fully aware of the existence of other associations dealing with landscape ecology. However, we believe that there is hardly danger of overlapping activities. The domain of these organizations is either too broad or too specialized for the rather specific needs of the forestry. And there is work for interdisciplinary co-operation.

We should also draw your attention to the following facts: Although forests are important landscape features in most parts of the world, foresters rarely participated actively in determining the distribution patterns of forests in various landscapes. Amounts and location of forests in our traditional landscapes were rather determined by negative selection with respect to other land use

types (suitability for agriculture, settlement, etc.) which virtually disregarded the nature of the forest and its potential environmental functions. We are only beginning to learn these facts retrogressively - when trying to defend forests from encroachment. What are the new criteria for determining the presence of forests in the landscapes of tomorrow?

Regarding landscape ecology as a science of structure and functioning of landscapes, we can state some of our principal aims and objectives as follows:

- 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 elements
- to initiate a research program 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 broadest 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 forests and other (natural, semi-natural or cultural) ecosystems in a given

landscape - and so forth.

In order to accomplish the above we intend to promote contacts and collaboration among the scientists interested - by publishing a newsletter, organizing meetings, workshops etc. at least once every four years, and by publishing the relevant research results - briefly by becoming a place of exchange for various ideas and by serving as a hotbed for a relatively young but most interesting branch of forestry, widely open to other sciences as well.

Since the XVIII. IUFRO Congress in Ljubljana, YU. in 1986 the working party "Landscape ecology" has been led by dr. Boštjan Anko, ass. prof. in Landscape ecology at the Forestry Dept., Biotechnical Faculty, Ljubljana, and by drs. Willem Vos from the "De Dorschkamp" research institute for forestry and landscape planning in Wageningen, Holland, who is acting as a co-chairman.

If you are interested in joining our working party you are kindly invited to contact us.

With best regards, hoping to hear from you soon,

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drs. Willem VOS

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PROPOSAL FOR A THEME FOR THE THIRD
IALE-SEMINAR IN 1991: LANDSCAPE ECOLOGY
AND (LAND-USE)ECONOMY

Introduction

"(True) conservation implies self-expression in the landscape, rather than blind compliance with economic dogma"

"Equipped with an excess of tools, society has developed an unstable adjustment to its environment, from which both must eventually suffer damage or even ruin. Regarding society and land as an organism, that organism has suddenly developed pathological symptoms, i.e. self-accelerating rather than self-compensating departures from normal functioning. Granted that science can invent more and more tools, which might be capable of squeezing a living out of a ruined countryside, yet who wants to be a cell in that kind of body politic?

I for one, do not..."

This challenging analysis of what land-use policies can do to the ecology of a region, could well have been written in 1985. It was written in 1935 however by the American Aldo Leopold, a wellknown

early ecologist!

The relationship ecology-economy

Landscape ecology evolved when converging developments within physical geography and ecology made these disciplines move towards one another. After a relatively quiet inception, this new discipline developed rapidly, particularly in the wake of the growing environmentalist movement from 1965 to 1975.

Landscape ecology was first applied to nature conservation. In this respect the aspect of vegetation science was of central importance. Particular emphasis was put on the structure of plant communities and/or ecosystems at first, at least in continental Europe. In studying such spatial aspects it became possible for landscape ecology to relate to physical planning in general and land use planning in particular. In fact it is this dialogue which explains the fact that landscape ecology experiences such rapid development in a country such as The Netherlands, where high population-density caused comprehensive land use planning to be introduced relatively early.

However, the evolution of land use planning clearly illustrates that economic developments are usually followed rather than determined by spatial planning. Possibly this also explains why even in landscape ecology the

relationship ecology economy remains underexposed so far. Those landscape ecologists who do take economy into consideration within their frame of analysis are rather more associated with the school of production ecology addressing itself to the study of function and process rather than structure and pattern.

Economy plays a dominant role in our landscapes.

Landscape ecology has so far neglected this fundamental fact. Next to spatial aspects economic developments could be the main incentive to evolve a more comprehensive landscape ecological frame of analysis. Changes in agricultural systems and climatic conditions are relevant in this respect, as are the urban-industrial developments causing them. These are societal processes dominated or triggered by economic developments. Incomplete or, worse still, total lack of analysis of these underlying economic developments will not allow for a significant contribution to be made by applied landscape ecology to solving some of our major environmental problems today!

Landscape ecology can not longer afford not to make such an analysis, since it is ecological processes that determine economic developments in the long run. Drastic changes in terms of climatic conditions or carrying capacity are illustrative in this context. After all, if landscape ecology truly is what it

- many species are recorded as being present or absent or on a semi-quantitative abundance scale,

- non-linear relationships between species and environmental variables,

- high inter-correlations among species and among environmental variables.

In addition to the more traditional ordination and cluster techniques, this is the first textbook to explain to ecol-

ogists in an elementary way such powerful data-analysis techniques as logit regression (a regression technique to analyse presence-absence data), canonical correspondence analysis (a canonical ordination technique to relate species communities to environmental variables) and kriging (a sophisticated spatial-interpolation technique).

DIARY 1988

- Jan 26 Conference on Alternative to
-29 Deforestation. BELEM, BRAZIL.
Enq: A. Anderson, Museu
Goeldi, Caixa Postal 399,
66.000 Belém, Brazil.
- Apr 6 International Symposium on
-8 Agricultural Ecology and
Environment. PADOVA, ITALY.
Enq: M.G. Paoletti, Agricultural
Ecology Symposium, Dip.
di Biologia, via Loredan, 10,
35100-Padova, Italy.
- Apr 12 75th Anniversary Symposium of
the British Ecological Society: Ecological Concepts-
-Contribution of Ecology to an
Understanding of the Natural
World, LONDON, UK. Enq: Admin-
istrative Office, British
Ecological Society, Burlington
House, Piccadilly, London W1V
0LQ, UK.
- Apr 24 Hydrological Processes and
-29 Water Management in Urban
Areas (IAHS/IAH/UNESCO).
DUISBURG, FRG. Enq: UNESCO,
7 Place de Fontenoy,
75700 Paris, France.
- May 5 International Conference on
-7 Lowland Heaths. NANTUCKET
ISLAND, MA USA. Enq: Dr. W.N.
Tiffney, Jr., Univ. of Massa-
chusetts, Nantucket Field
Station, POB 756, Nantucket,
MA 02554 USA.
- May 9 Hydrology of Wetlands in
-13 Semi-arid and Arid Regions
(IAHS/IAH). SEVILLE, SPAIN.
Enq: ICSU Secretariat, 51 Bd.
de Montmorency, 75016 Paris,
France.
- May 19 15th Annual Conference on
-20 Wetlands Restoration and
Creation. TAMPA, FL USA.
Enq: F. Webb, Director of
Economic Development,

- Hillsborough Community
College, Plant City Campus,
1206 North Park Rd., Plant
City, FL 33566 USA.
- May 23 International Workshop on
-27 the Role of Ecotones in
Aquatic Landscape Management
and Restoration. LAXENBURG,
AUSTRIA. Enq: MAB Secretariat,
7 Place de Fontenoy, 75700
Paris, France.
- May 23 International Workshop on
-27 Land/Inland-Water Ecotones:
Strategies for Research and
Management (Hungarian Acad. of
Science/IIASA/UNESCO/IHP).
SOPRON, HUNGARY. Enq: Dr. M.M.
Holland, MAB Secretariat, Div-
ision of Ecological Sciences,
7 Place de Fontenoy, 75700
Paris, France
- May 29 6th World Congress on Water
-Jun 3 Resources: Water for World
Development (IWRA). OTTAWA,
ONTARIO, CANADA. Enq: Secre-
tariat, 6th IWRA World Con-
gress on Water Resources,
Univ. of Ottawa, 631 King
Edward Ave., Ottawa, Ontario
K1N 6N5, Canada.
- Oct 3 VIIIth. International Sympo-
-7 sium on Problems of Landscape
Ecological Research: Spatial
and functional relationships
in landscape ecology. Enq:
Inst. of Exp. Biol. and Ecol.
Obrancov mieru 3, 814 34
Bratislava, Czechoslovakia.

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sredy,
i vodnych resursov,
Sofia, ul. Industrialna 7.

claims to be, an interdisciplinary science studying entire landscapes as systems, it has to also address itself to the analysis of the economic processes underlying changes in these landscapes!

Towards the development of the proposed theme.

Seen from a landscape ecological perspective our economy is a world-wide system. The analysis of the theme landscape ecology and (land use)economy is therefore bound to include international aspects. This is why it is the International Association for Landscape Ecology that should address itself to the issues involved. After all such an analysis cannot be undertaken from one country only, but should involve a number of researchers studying (the effects of) their economies (on their landscapes) comparatively. This means they will make

such an analysis starting from a common conceptual framework to be elaborated at our 1991 International Seminar! Thus we could explore the (methodological) issues involved e.g. by presenting a number of (regional) case-studies. Some of these may well focus on the production of animal protein (milk, meat) in e.g. Great Britain, Northern-France, Belgium, Netherlands and Denmark (North-Western Europe). Both the ecological and economic effects of this type of agricultural production on a particular landscape would have to be analysed. Monitoring and modelling studies would have to be made to generate a number of alternative scenarios, only some of which would be acceptable to both economists and landscape ecologists.

Rob Jongman (The Netherlands)
Kees Nieuwerth (The Netherlands)
Peter Smeets (The Netherlands)

BOOKREVIEW

Jongman, R.H.G., C.J.F. ter Braak and O.F.R. van Tongeren. Data analysis in community and landscape ecology.

Pudoc, Wageningen 1987. f 90,-
ISBN 10-220-0908-4.

Data analysis can help ecologists to interpret field data on plant and animal communities and their environment. This book provides a new synthesis of methods that have proven to be most useful for

data analysis. It contains chapters on data collection, regression analysis, calibration, ordination, cluster analysis and spatial analysis. Examples and exercises (with solutions) complement most chapters. Three case-studies are also included.

Only simple mathematics is used, making the methods accessible to most ecologists and geographers. In the selection of methods, due attention has been paid to the special properties of ecological data:

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