
iale

Volume 4 No. 2 December 1986

bulletin**International Association for Landscape Ecology**

EDITORIAL

A very successful IALE Symposium held during the IVth International Congress of Ecology in Syracuse already lies several months behind us. This symposium, as well as various other meetings on Landscape Ecology have drawn a lot of attention especially in North America, and two symposia (one in Canada and one in the USA) are scheduled in the near future. We hope the break-through in this part of the world will have a spin-off in other parts, where Landscape Ecology is still not very well or not enough known.

Although work on the publication of the Syracuse papers is in progress, we have printed the abstracts of these papers in this issue, as information for those who were not present at the symposium.

IALE INFORMATION**EXECUTIVE COMMITTEE MEETING, AUGUST 1986**

During the IVth International Congress of Ecology in Syracuse, USA, a meeting of the Executive Committee of IALE took place on August 12, 1986. At this meeting all members of the Committee were

present. Further you will find an article by M. Ruzicka about international cooperation in landscape ecological research, IALE Information, news from Working Groups as well as information on meetings in 1987, especially the Second International IALE-Seminar in Münster Next July, where also the 3rd General Assembly of IALE will be held.

And last but not least our usual request: We welcome your contributions, comments and relevant information for the next Bulletin. Hopefully the "Letters to the Editor" section will not be empty then.

With our best wishes for 1987,

S.M. ten Houte de Lange,
W.B. Harms.

present. The President of IALE, Dr. Zonneveld, opened the meeting and reported on his visits to Thailand and Indonesia, where he raised interest in IALE. In Thailand he gave a lecture on Landscape Ecology for an audience of mainly geographers and physical planners. As a result of another lecture in Bandung, Indonesia, there are now plans

to organize a training course in Landscape Ecology in that country. The draft agenda for a business meeting of IALE, to be held later that week, was amended and adopted.

Further, the Executive Committee discussed the present situation concerning the IALE-Regions and decided to start to formalize the existing ones. To this end, the international secretariat will inform all Regions as well as contact persons again about the respective responsibilities of the regional secretariats and the international secretariat. All regions are asked to send information about the present status of organization (bylaws, officers, membership lists). All formalized Regions will then be asked to nominate one of their members as their representative in the Council of IALE.

The IALE Working Groups have also been discussed in the meeting. As IALE functions partly through its Working Groups, the Executive Committee is looking forward to more activities in these groups.

Concerning the financing of the International Secretariat, the Executive Committee decided that all formally established regions (with exception to those who support IALE already by other means) shall remit 10% of their financial means to the International Secretariat.

Finally, the Executive Committee discussed the second international IALE Seminar to be held in Münster (FRG) from 19-24 July 1987. It agreed on the theme

"connectivity in Landscape Ecology" for this Seminar. In the mean time the Seminar Organizing Committee in Münster has prepared and mailed the first circular and call for papers. The programme for the Seminar will be included elsewhere in this Bulletin.

OFFICIAL ESTABLISHMENT OF THE U.S. REGIONAL ASSOCIATION OF IALE

On August 14, 1986, a business meeting was held in Syracuse, during which the U.S. Regional Association of IALE was officially established. After an introduction of the Interim Councillors, the draft Bylaws for the Regional Association were ratified by the meeting. The meeting then elected the following Officers in the Council of the Regional Association:

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| Chairperson | David M. Sharpe, Southern Illinois University, Geography. |
| Programme Chairperson | Monica G. Turner, University of Georgia, University of Georgia, Physiol. Ecol. |
| Secretary | Joan Nassauer, University of Minnesota, Landscape Architecture. |
| Treasurer | William H. Romme, Ft. Lewis College, Plant Ecology. |
| Councillors at large | Jerry F. Franklin, U.S. Forest Service, Forestry |

Paul G. Risser,
University of New Mexico,
Plant Ecology.

John Wiens,
Colorado State
University,
Animal Ecology.

Dr. Monica Turner then announced the Second Annual Symposium on Landscape Ecology, to be held from March 9-11, 1987 in Charlottesville, Virginia under the title: "The influence of land-use pattern on landscape function: Ecological Theory and Management Implications."

IALE BUSINESS MEETING IN SYRACUSE ON 14 AUGUST 1986

Directly following the first Business meeting of the U.S. Regional Association of IALE, a short international Business meeting of IALE was held. The meeting was opened by the President of IALE, who congratulated the now officially established U.S. Regional Association and expressed his good wishes for a successful future development of this Region and his desire for a fruitful cooperation between the Regional Council and the International Association. After this, the Secretary-General gave a short overview of the state of development of IALE and a report of the recent meeting of the Executive Committee. He namely mentioned the plans to establish the Council of IALE during the 3rd General Assembly of IALE, to be held during the seminar in Münster. This was followed by a report of the Treasurer of IALE who

explained the still somewhat difficult financial situation of the International Secretariat and of the decision of the Executive Committee that each IALE Region must remit 10% of its financial means to the International Association.

Finally the plans for the second International IALE Seminar in Münster were presented.

SYMPOSIUM ON LANDSCAPE ECOLOGY IN SYRACUSE

The Symposium on Landscape Ecology, organized by IALE on the invitation of INTECOL and held during the IVth International Congress of Ecology in Syracuse, has been a great success. There was a lot of attention for this symposium from the participants of the Congress. For your information the abstracts of the symposium lectures are including elsewhere in this issue. The lectures presented at the symposium will be printed, together with some other relevant papers, in a book edited by Dr. I.s. Zonneveld (NL) and Dr. R.T.T. Forman (USA) and published by Springer Verlag. More information about this book will be given in the next IALE Bulletin.

CALL FOR PAPERS

Second international IALE-seminar
in Münster (FRG)
July 19. - 24.1987

"CONNECTIVITY IN LANDSCAPE ECOLOGY"

In the densely populated landscapes of Central Europe with its conurbation regions and highly intensive agricultural exploitation the variety of different habitats decreased during the past decades. Also remnants of former cultural and natural landscapes are suffering from isolation.

The forthcoming IALE-Seminar will therefore focus its attention on the importance, the functions and the management of habitat networks (patches and connecting elements) in landscapes. Theoretical approaches, new research results as well as their application in (ecological) land use planning will be dealt with.

The Seminar will have the following main themes:

I Connectivity in rural landscapes

Concepts and research of habitat networks. Significance of habitat size, isolation and connecting elements.

II Connectivity in urban landscapes

Importance of connecting structures in urban areas and concepts for new "ecological" cities (habitat-networks in cities).

III Planning of habitat networks

Practical examples of planning and realisation. Restoration of former network structures and construction of new ones.

IV Management of elements of a habitat network

Knowledge and experience in maintaining habitat networks

Papers and posters

Plenary sessions will be held for presentation of papers dealing with the themes mentioned above. Poster sessions will be held during the whole seminar.

Participants who want to present a paper or a poster, can indicate this.

An abstract of up to 250 words must be submitted together with the registration.

Abstracts will be included in the working papers of the seminar.

Registration

Deadline for registration is January 31, 1987.

The seminar fee will be 100,— DM for IALE members, 130,— DM for non-members and 50,— DM for students. The seminar fee has to be remitted before January 31st 1987. Money transfer orders should be free of costs for the receiver.

The seminar fee includes organization costs, working papers and proceedings. The seminar proceedings with papers of oral and poster presentation will appear after the seminar.

For reasons of space limitations the number of participants will have to be restricted to 350 persons.

Excursions

Pre-seminar excursions of 1 or 2 days will be arranged. For participants who do not move on to the International Botanical Congress - to be held directly after the seminar in Berlin - we will offer also post-seminar excursions.

Language

The official seminar language will be English. No simultaneous translation will be provided.

IALE meetings

During the seminar IALE Committee meetings will be held, as well as the

second General Assembly of IALE.

IALE-organizing committee:

Prof. Dr. K.-F. Schreiber, Münster (FRG)
 Dr. R. Thöle, Münster (FRG)
 Dr. A. Vogel, Münster (FRG)
 Drs. S.M. ten Houte de Lange, Leersum (NL)

For inquires and registration:

IALE-seminar organizing committee
 Lehrstuhl Landschaftsökologie
 Institut für Geographie, Universität
 Münster
 Robert Koch-Str. 26
 D-4400 Münster
 Telephone: 0251-833699

IALE WORKING GROUPS**WORKING GROUP "LANDSCAPE ECOLOGY OF AGRO-ECOSYSTEMS"**

Between 1985 and 1986 four members of IALE have expressed their interest in a working group on the relations between landscape ecology and agro-ecosystems. In April 1986 two of these members, Dr. Gulinck and Drs. Smeets met in Leuven (Belgium) and worked out in more detail the purposes and the future activities of the working group.

Both agreed that in general terms, the purpose of the working group should be the advancement of the role of landscape ecology in agriculture. Starting point in the realisation of this purpose is the communication about the activities of the members of the working group.

The next activity of the working group

could be the formulating of themes. A first proposition for such a theme could be: "Marginal phenomena in agriculture and their landscape-ecological consequences." "Marginality" in agriculture refers to those parts of the agrosystems that are loosening economic importance because of spatial, physical, edaphic, climatic and other reasons. It is interesting to know the landscape ecological consequences on different scale levels within agriculture as well as in a broader scope.

Examples:

- The abandonment of farmland in urbanised areas.
- The impact of changing landscape structures on soil erosion.

Interested IALE members are asked to join this working group and to express their opinion about this proposition. If accepted the next step could be a fur-

ther specification of the theme by a description of the situation in the country of each of the members.

A meeting of the European members of the working group could be held within the forthcoming months in order to discuss further activities.

Contact persons:

P.J.A.M. Smeets
R.I. "De Dorschkamp"
P.O. Box 23
NL - 6700 AA Wageningen
(The Netherlands)

H. Gulinck
K.U. Leuven, Faculteit Landbouw
Kardinaal Mercierlaan 92
B - 3030 Leuven (Belgium)

WORKING GROUP "ECOLOGY OF THE RHINE
CATCHMENT AREA"

Large European Rivers Network

Within IALE a working group on the Rhine catchment area is planned. While preparing this working group another initiative was started, with a more general objective: a European Network of scientific cooperation of water management and ecological research in the alluvial valleys of large rivers.

A group of scientists from several Western European countries met in March 1986 in Lyon (France) geographers, hydrologists, biologists and technicians. Several themes were discussed,

amongst others:

- historic changes of European alluvial rivers,
- relation between groundwater and surface water,
- interactions between river channel and floodplain systems,
- fish and their environment in large rivers.

In the future more meetings of the European Network will be held. They will be announced in the newsletter of the network. The newsletter is open for those who do related research and want to join the network.

The central address is:

Prof. A.L. Roux
Ecologie des Eaux Douces
Bt 403
Université Cl. Bernard Lyon 1
43 Bd. du 11 novembre 1918
69622 Villeurbanne Cedex
France

The network has set up several activities, such as:

- meetings,
- joint publishing of books,
- joint research projects,
- a new journal.

This journal is started already and is called "Regulated Rivers, research and management". It is issued 4 times a year. The price is US \$ 110 (outside the UK).

Editor in chief is
dr. G.E. Petts,
Dept. of Geography,
University of Technology,
Loughborough
Leicestershire
LE11 3TU UK.

IALE WORKING GROUPS

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

1. ECOLOGICAL INFRASTRUCTURE

Contact persons:

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

Contact person:

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

3. ECOLOGY OF THE RHINE CATCHMENT AREA

Contact person:

Drs. R.H.G. Jongman
Dept. of Urban and Regional Planning
Agricultural University
Gen. Foulkesweg 13
6703 BJ WAGENINGEN
The Netherlands

4. COASTAL MANAGEMENT

Contact person:

Drs. J. visser
Rijkswaterstaat Deltadienst
Environmental Div.
Postbus 439
4330 AK MIDDELBURG
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5. URBAN ECOLOGY

Contact person:

Prof. T. Bartkowski
Institute of Physical Geography
A. Mickiewicz University
ul. Dolna Wilda 34 A.m. 9
61552 Poznan
Poland

6. GEOGRAPHICAL INFORMATION SYSTEMS

Contact person:

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

7. ECOLOGY OF THE DANUBIAN CATCHMENT AREA

CONTACT PERSON:

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

It is necessary to develop further coordination of the activities of IALE and this Network in the future. We both can be of advantage to each other. The first contacts about related research projects already took place. I think this will be continued in the near future.

Rob. H.G. Jongman
Agricultural University
Dept. of Physical Planning
Gen. Foulkesweg 13
6703 BJ WAGENINGEN
The Netherlands

FEATURES

INTERNATIONAL COOPERATION IN LANDSCAPE ECOLOGICAL RESEARCH

by M. Ruzicka

The scientists in the whole world pay constantly increasing attention to the questions of landscape ecological research since the ecological problems have been encompassed into the scientific and technical cooperation of the CMEA countries, and since the launch of the UNESCO Man and Biosphere Project and the foundation of UNEP. Within the framework of the scientific and technical cooperation of the CMEA countries, these problems have been concentrated in the program III Preservation of Ecosystems/Biogeocenoses/ and Land, within the framework of UNESCO MAB Program these problems have been encompassed in several projects, particularly Nos. 10 and 11, and within the UNEP framework these problems are extended over all programs and projects.

In the past 18 years conditions were created in Czechoslovakia for the foundation of interdisciplinary centres devoted to the ecological questions at the level of the landscape representing

a set of ecosystems. The Slovak Academy of Sciences organized seven triennial meetings of scientists coming from countries with different social systems and various continents.

The tradition of international symposia played an important role at the enhancement of international contacts supporting the study of landscape ecology in many European countries. Landscape ecologists in The Netherlands, assembled in the Society for Landscape Ecology, counting many members, organized many symposia since 1972. In 1981 they convoked the first international congress on landscape ecology which represented an important step for the enhancement of the international contacts.

The first parts of the proceedings of the symposia organized so far were devoted to professional questions related to topics of the respective symposia. The first symposium held in 1967 focussed on the theoretical and methodological questions in landscape ecological research, the second one took place in 1970 and was aimed at the practical implementation of research in landscape ecology. The contents and

objects of the comprehensive landscape research were discussed at the third symposium held in 1973, and the preparation and elaboration of the ecological documents for optimal utilization of the landscape were treated by the fourth symposium in 1976. The fifth symposium organized in 1979 was aimed at questions of ecological stability, resistance, diversity, potency, efficiency and equilibrium of the landscape. The sixth symposium in 1982 was focussed on the ecosystem approach to landscape ecological problems of an agricultural landscape and its stability, and the last, seventh symposium organized in 1985 was devoted to the topological problems of landscape research and planning.

In the second parts of the proceedings scientific and organisational questions concerning the enhancement and extension of international cooperation were discussed. The solution of ecological problems concerning the biosphere is coordinated in a specific way in the CMEA countries. Concurrently, the international cooperation and coordination are developed within the framework of the UNESCO, UNEP, INTECOL, IUCN, IAU, IFLA, IGU, IUBS, and a series of governmental and non-governmental programs.

In the Final Recommendations of the Vth International Symposium on Landscape Ecological Research which took place in 1979, the Czechoslovak endeavour to enhance the international cooperation was formulated in the requirement to find an adequate organizational form for supporting the landscape ecology re-

search. A team of Dutch landscape ecologists undertook the formulation of the requirement and submitted more concrete designs at the first international congress. The first working principles for the foundation of the International Association for Landscape Ecology (IALE) were accepted in the presence of 300 participants from 24 countries. The Preparatory Committee consisting of the members of the Dutch Society of Landscape Ecologists was established with Drs. S.M. ten Houte de Lange playing an active role. At the congress the foundation of IALE was recommended to be carried out at the Vith International Symposium on Ecological Research which was held in Czechoslovakia in 1982. The proposal was based on the fact that the Czechoslovak international symposia have been a base for this cooperation and the participants of the congress wished to regard the tradition in this way.

The question of the establishment of IALE was placed on the agenda of the Vith International Symposium on Landscape Ecological Research held in Piešťany (Czechoslovakia) in October 25-30, 1982 visited by 114 scientists from 15 countries. The Joint Group on the Preparation of IALE discussed and prepared the final version of the statutes of the new association on October 26, 1982. On October 29, 1982 in the morning discussions chaired by Drs. S.W.F. van der Ploeg, the statutes were adopted by the participants from Austria, Canada, Cuba, Denmark, Federal Republic of Germany, The Netherlands, Portugal, Thailand, USA. The participants from Bulgaria, Czechoslovakia,

German Democratic Republic, Poland and USSR participated as observers since their official cooperation had to be discussed firstly with the representatives of their respective academies of sciences.

In 1984 the first meeting of the General Assembly of the Association was held during the 1st International Seminar on the Methodology of the Landscape Ecological Research and Planning. In the respective countries the work was done which was necessary for providing the participation in the IALE activities through the regional sections. The East European Section was established, with the secretariat in Czechoslovakia and its seat in the Institute of Experimental biology and Ecology of the Centre of Biological and Ecological Sciences of the Slovak Academy of Sciences. The second meeting of the General Assembly was held during the VIIth International Symposium on the Landscape Ecological Research in Czechoslovakia in 1985.

The fact that the establishment of the International Association for Landscape Ecology took place in Czechoslovakia was an honour to the Czechoslovak science and research which laid the foundations to the development of international cooperation in this area. The socialist countries conducting the ecological landscape research within the framework of the CHEA scientific and technical cooperation on the problem of Protection of Ecosystems/Biogeocenoses/ and Landscape thus contribute to the solution of questions concerning the creation and protection of the environment. The

endeavour of scientists from Czechoslovakia and other socialist countries which is aimed at the development of international cooperation of landscape ecologists within the IALE framework is their actual contribution to the creative enhancement of the peaceful coexistence of nations and peaceful cooperation of scientists to the solution of the questions related to the care of the environment in the spirit of Final Conclusions of the Helsinki Agreement.

Milan Ružička

Institute of Experimental Biology and Ecology of the Centre of Biological and Ecological Sciences,
814 34 Bratislava, Obrancov Mieru 3,
Czechoslovakia

SUMMARIES OF THE CONTRIBUTIONS TO THE INTECOL SYMPOSIUM ON LANDSCAPE ECOLOGY during the IV International Congress of Ecology, Syracuse USA, August 10-16, 1986.

FORMAN, R.T.T. Harvard University,
Cambridge, MA 02138, USA.

Shapes and flows in landscape ecology.

Energy, materials and species move through a landscape by the forces of mass flow and locomotion. Locomotion through narrows exhibits deceleration whereas mass flow exhibits acceleration. Two form-and-function principles indicate the locations of major flows. The shapes of a landscape element (e.g., rounded, convoluted, dendritic) and its edge structure (e.g., dense, small pores, large pores) primarily determine

the flows within or across its boundary. Thus the forest edge is analogous to a semipermeable membrane where its structure affects flows of different objects along and across the edge. The generality of the "saum and mantel" model of edge structure is evaluated, as well as the relationship between edge porosity and forest interior area. The significance of patch shape in ecology is pervasive, and four common shapes are considered in terms of interior and edge ecies. Boundary shapes (e.g., corner concave, sharply convex) in different portions of a patch exhibit distinct patterns of flow across the edge. Thus curvilinearity of corridors and patch edges significantly affects their major conduit and filter functions. I conclude that patch and corridor shape, independent of landscape element size and configuration, exerts a primary control over flows in a landscape, and has predictive value in both landscape functioning and change.

RISSER, P.G. Illinois Natural History Survey, Champaign, IL 61820, USA. Landscape pattern and the distribution of materials, nutrients and energy.

Several well-developed theories exist for describing the distribution of materials, nutrients and energy in riverine systems. These ideas address the ways in which the biotic components process and transport organic matter, with the resulting distribution of nutrients. It is now possible to relate the distribution of materials in fluvial systems which include watershed characteristics. Retention and transport of

nutrients and energy can be predicted from various landscape characteristics such as size, shape and configuration of vegetation types, soil conditions, disturbance patterns and human manipulations of the landscape. This paper presents a synthesis of how landscape pattern influences the distribution of materials, nutrients and energy from terrestrial to aquatic systems.

MERRIAM, G. Carleton University, Ottawa, Ontario K1S 5B6, Canada.

Ecological processes in farmland mosaics.

Our working view of farmland takes forest fragments and farmsteads as elements of a heterogeneous mosaic in which temporal and spatial cascades of ecological processes interconnect the landscape elements into a functional system. White-footed mice are woodland species. Populations in forest fragments suffer frequent local extinctions and depend on landscape connectivity for recolonizations and unity into "metapopulations." Of all landscape resources, forest fragments have the greatest continuity and permanence. Woody fencerows are semi-permanent landscape infrastructures. Farmsteads become valuable infrastructures seasonally when full barns and winter coincide. Other landscape elements become infrastructures for shorter times. Sweet corn and small grain fields are used by *Peromyscus* when they provide cover and food. Furrows in plowed sweet corn fields provide insulated tunnels stocked with cob corn and leaves for nests. Other landscape elements, such as

hay and pasture fields, never become mouse infrastructure. The mice combine permanent patches, semi-permanent corridors and various short time-base elements into a spatially and temporally dynamic resource supply.

OPDAM, P. and B. HARMS. Research Institute for Nature Management, 3956 ZR Leersum, The Netherlands and Research Institute for Forestry and Landscape Planning "De Dorschkamp", 6700 AA Wageningen, The Netherlands.

Biogeographical impacts of changing the Dutch landscape.

In terms of landscape structure, the distribution of species is related to size and density of suitable habitat patches, to interpatch distance and to the "hostility" of the intersitial landscape for dispersing propagules. On different spatial scales, changes in the Dutch landscape have implications for the distribution of species. Following extensive afforestations, several forest bird species expanded their range and now have stable populations in formerly isolated woods. On a more detailed scale, removal of woodlots and hedgerows from agricultural landscape increased the isolation of the remaining woodlots, even for birds. In recent years the concept of ecological infrastructure has been developed, aiming at a reconstruction of dispersal corridors to link nature reserves. For planned recreational forests, a method was developed to incorporate their functions of habitat islands and dispersal corridors as planning criteria into the physical planning process.

HABER, W.E. Technical University of Munich, Weihenstephan, 8050 Freising 12, Federal Republic of Germany.

Using landscape ecology in planning and management.

Ecological land-use planning ranks main land-use types, which are identified as ecosystem/ecotype complexes, according to decreasing naturalness and increasing environmental impact generation. Their respective surface area, spatial distribution pattern and degree of interrelations or dependence are determined to establish the impact structure of a region, distinguishing within- and between-systems impacts. Special consideration is given to impact-sensitive, (semi-)natural ecotopes disregarded by yield-orientated land-use, which are taken as a base of methodical planning of protected sites. A three-level hierarchical planning approach comprising geographical information systems, feedback models and scenarios is employed on both comprehensive landscape planning and modelling. From this approach, resource management strategies and land-use intensity proposals are derived for each land-use type, with the aim of minimizing impacts and conserving natural resources.

RUZICKA, M. Slovak Academy of Sciences, Bratislava, Czechoslovakia.

Basic premises of landscape ecological planning.

In Czechoslovakia during the last twenty years the theory and methods of landscape-ecological planning (LANDEP) as a specific form of complex landscape-

ecological investigation with a certain degree of application for the requirements of planning and projecting practice has been worked out. This approach opens possibilities for developing a new branch of basic research as well as for a more complete application of ecological standpoints for territorial planning and projecting. In a sphere of theoretical research, LANDEP possesses characteristics of planning the optimal utilization of ecological properties of the landscape and creating conditions for a harmony between man and landscape. In territorial planning practice LANDEP has a simplified form of ecological evaluation of territory (EET) which becomes part of the data on the territory and in this manner also part of the planning and projecting processes.

ZONNEVELD, I.S. International institute for Aerospace Survey and Earth Sciences ITC, 7500 AA Enschede, The Netherlands. Scope and concepts of landscape ecology.

Landscape ecology can be considered fundamentally as a marriage between geography and biology. Three main viewpoints of land can be distinguished: (1) the visual side (landscape image), (2) landscape as a chorological agglomerate of land units and (3) land as a holistic entity vertically (between land attributes) as well as chorologically. Practical questions, raised by land management and conservation and land reclamation for production as well as watershed management and pure protection, appear to stimulate the above formulated landscape ecology as an applied scientific

approach. So "land evaluation" methodology (originally developed by agriculturally-oriented soil scientists) and "integrated" pre-planning studies (land surveys) both using environmental data like soils, vegetation, water and climate, but socio-economic political data, appear to be incorporated into landscape ecology. This holds not only for pure methodology (with systems approach tendencies) but also for a priori scientific points of view (holism, landscape ecological state of mind). Landscape ecology can also be considered as a basic tool for development and regional and physical planning. The total view of the earth's surface including all living and non-living attributes, however, also has meaning and impact on pure science.

IALE MEMBERSHIP DUES

Please remit your membership dues for 1987 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).

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

IALE EXECUTIVE COMMITTEE

President: I.S. Zonneveld (Netherlands)
 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)
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The IALE BULLETIN is published twice yearly. News items, articles comments and suggestions are welcomed.

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DIARY

DIARY 1987

- Mar 9 2nd Annual Landscape Ecology
 -11 Symposium: The Influence of
 Land Use Pattern on Landscape
 Function--Ecological Theory
 and Management Implications.
 CHARLOTTESVILLE, VA USA. Enq:
 Dr. W.E. Odum, Arrangements
 Chair, Dep. of Environmental
 Sciences, Univ. of Virginia,
 Charlottesville, VA 22903
 USA.
- Mar 16 International Workshop on
 -22 Desert Ecology. SEDE BOQER,
 ISRAEL. Enq: Prof. U.
 Safriel, The Blaustein Inst.
 for Desert Research, Sede
 boqer Campus, Israel 84990.

- April 24 UNESCO. International
 -29 Symposium: Hydrological
 1988 processes and water manage-
 ment in Urban Areas.
 Duisberg, FRG. Enq: IHP/OHP-
 Sekretariat
 c/o Bundesanstalt für Gewäs-
 serkunde
 p.o. box 309
 D-5400 Koblenz, FRG.
- May 14 Annual Conference on Wetlands
 -15 Restoration and Creation.
 TAMPA, FL USA. Enq:
 F.J. Webb, Jr., Director of
 Economic Development,
 Hillsborough Community
 College, Plant City Campus,
 1206 North Park Rd., Plant
 City, FL 33566 USA.

- | | | |
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| <p>May 19 -21</p> | <p>First Canadian Symposium a Workshop on Landscape Ecology and Management: Landscape Ecology and Management. Enq: Dep. of Geography, University of Guelph, Guelph, Ontario, Canada, N1G ZW1, tel. (519)824-4120 ext. 2171.</p> | <p>International Symposium on Vegetational Structure, Dep. of Plant Ecology, Lange Nieuwstraat 106, 3512 PN Utrecht, The Netherlands.</p> |
| <p>May?</p> | <p>International Conference on Technological and Economical Problems of Environment SVIECO '87. SVISHTOV, BULGARIA. Enq: Prof. H. Marinov, SVIECO '87, Higer Inst. of Economics and Finance, 5250 Svishtov, Bulgaria.</p> | <p>Jul 19 -24</p> <p>International Seminar of the International Association for Landscape Ecology. MUNSTER, FRG. Enq: Institut für Geographie, Universität Münster, Robert Kochstr. 26, D-4400 Münster, tel. 0251-833699</p> |
| <p>Jul 14 -18</p> | <p>International Symposium on Vegetational Structure. UTRECHT, THE NETHERLANDS. Enq: Symposium Secretariat,</p> | <p>Jul 24 -Aug 1</p> <p>14th International botanical Congress (IUBS). BERLIN, FRG. Enq: Botanisches Museum Berlin-Dahlem, Konigin-Luise-Str. 6-8, D-1000 Berlin 33, FRG.</p> |

To join membership of IALE, please complete this form and return with your dues to the address of the Regional IALE Secretariat (list of addresses in this Bulletin) or to the International IALE-Secretariat if no region exists. Please make checks, money orders, or bank transfers payable in U.S.dollars or the equivalent in local valuta.

Annual membership dues
(please check appropriate status and
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