

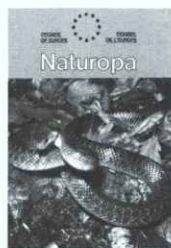
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Naturopa





European
Information
Centre
for
Nature
Conservation



The symbol for the Council of Europe's nature conservation activities.

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Cover: *Elaphe longissima longissima* (Aesculapian snake) (Photo P. Brodmann)
Back: *Bufo Bufo* (Common toad) (Photo M. F. Broggi)

Naturopa

No. 27-1977

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unknown... unloved... threatened...

At about the same time that the President of the USA exhorted his countrymen to drastically conserve energy, disaster struck on a drilling platform in one of Europe's choppiest seas; a short time later an international conference found that one of Europe's great rivers, in spite of all efforts, continues to be degraded; while UNEP's Director warned against the continued abuse of our natural environment.

It is not only useful but absolutely imperative that these storm warnings be reported and that (in our case) Europeans be fully informed. Information is one of the privileges of democracy. The Council of Europe's Information Centre for Nature Conservation strives to bring the conservation message, i.e. the need to realise that the environment cannot endlessly be abused without finally paying the bill, to those whose influence and decisions will shape tomorrow's environment.

This year the European Information Centre for Nature Conservation celebrates its tenth anniversary: in 1966 the Council of Europe's Committee of Ministers decided that there was a place in Europe for such a centre. Ever since, and with increasing momentum, the centre has endeavoured, through its "vehicles" such as this magazine, our monthly nine-language version *Newsletter*, a feature series, a documentation service, and most of all through spe-

cial topical publicity campaigns, such as the present one on the conservation of wetlands, to keep you informed of the plight of our natural environment and the dangers and risks we are running as a result.

This issue features an article by Marc Segers, the Centre's National Agent in Belgium who reviews our position and possibilities. We have also published an article (to be followed by a second one in the next issue) on the heavy toll levied by roads, railways, high tension wires, agricultural activities and canals on wild fauna, often accompanied by loss of human life and/or material damage.

Unknown...Unloved...Threatened... A recent study produced for the Council of Europe has revealed the disastrous situation of amphibians and reptiles: destruction of their habitats, overexploitation for various ends and road traffic being only a part of the reason for their decline. By dedicating our cover pages and the central colour pages as well as an article to this theme, we hope to contribute to their conservation.

In this and future issues of *Naturopa*, as well as through our other channels, we shall continue to inform you of what is happening in the natural environment in Europe. In doing so, we hope to enlighten you about the problems facing us.

H. H. H.



Editorial

— thirty-eight Committee of Ministers' Resolutions,

— the success of European Conservation Year 1970,

— twenty-seven issues of the bulletin *Naturopa*, representing more than 500 000 copies distributed,

— several dozen studies,

— over a million copies of the monthly *Newsletter* distributed during the last six years, first in eight, and now in nine, languages,

but to describe briefly the purpose of the Council of Europe's action in this field.

The work of the European Committee has changed considerably over the fifteen years of its existence. To begin with, the questions tackled related to the use of pesticides, the protection of the countryside and the combating of oil-pollution of the seas. Since the first European Ministerial Conference on the Environment in 1973, the Committee has concentrated its work on:

— management of the natural environment,

— the conservation of wildlife,

— information, education and training.

The Centre has developed along similar lines, and all its initiatives, especially its information campaigns, are increasingly directed towards the protection of the natural environment: suffice it to mention the present campaign on the conservation and management of wetlands, which is having notable success in almost all European countries, chiefly owing to the decisive role played by the Centre's national agencies and correspondents.

I should like to mention, in this regard, the remarkable way in which the European Committee's action and that of the Information Centre complement each other. The aim of the European Committee being to improve intergovernmental co-operation between the nineteen Council of Europe member states, its work consists essentially in proposing to the Committee of Ministers, for adoption, legal instruments such as resolutions, conventions and charters. Once these instruments have been adopted, governments are asked to apply them in their respective countries.

In January 1962, the European Committee for the Conservation of Nature and Natural Resources held its first session and thus opened a new era in the life of the Council of Europe. Five years later, the Committee of Ministers set up the European Information Centre for Nature Conservation.

This year, 1977, is therefore the fifteenth anniversary of the European Committee and the tenth anniversary of the Information Centre.

It is not my intention to give an exhaustive list of achievements in the environmental sector which include:

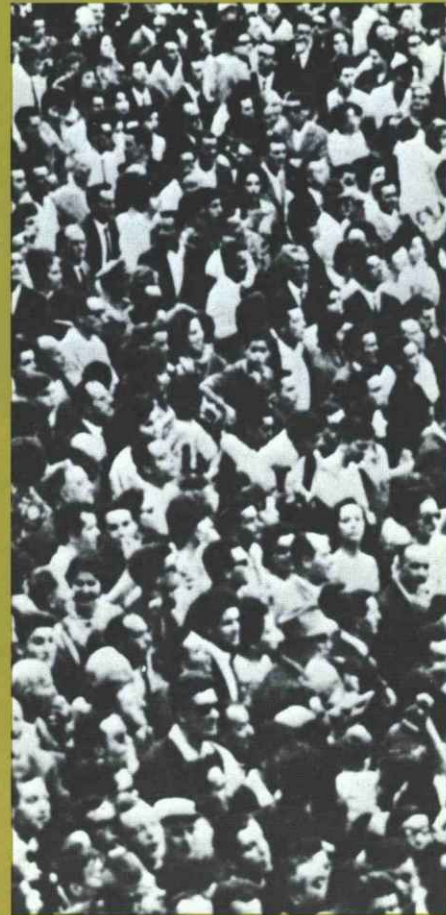
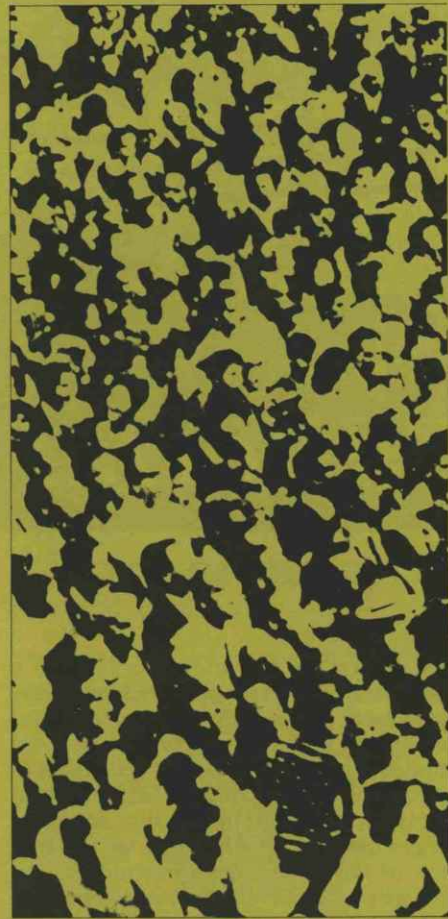
The Centre, for its part, works through a network of national agencies (and correspondents in the European non-member countries), and its function is to alert, inform and educate the public with the help of educationists, private associations, socio-professional groups etc. acting as relays. In this way it promotes the application of the various legal instruments approved by the Committee of Ministers, and particularly the recommendations, while at the same time stimulating the initiation of new intergovernmental activities. As an illustration of this complementarity, I would mention the 1973 information campaign on soil conservation aimed at promoting the application of the principles set out in the Soil Charter which had just been approved by the Committee of Ministers. A further instance is the choice of theme for the next campaign, which is to take place in 1979-80 and will deal with "Conservation of Wildlife and Natural Habitats"; this theme is at present being discussed by an ad hoc Committee of Experts appointed to draw up a European convention.

In view of the success and efficacy of this original form of co-ordinated action in one and the same field, it is planned to extend it progressively to the regional planning, monuments and sites, and local authorities sectors, as the means made available to the Secretariat permit. Unfortunately, the present economic situation and consequent policy of austerity are hardly calculated to hasten the realisation of this project.

However, I remain optimistic, for the pressure of public opinion must not be underestimated and there is a general tendency, as illustrated in the recent local elections in France, to attach more and more importance to the quality of life.

I therefore look forward with justifiable confidence to the extension of the Council of Europe's already considerable action in this highly topical sphere.

Allow me, in conclusion, to express my deep gratitude to all experts, national agencies and correspondents, to all those, in short, who have placed their talents and untiring devotion at the service of the Council of Europe, so as to enable it to make an effective contribution to the protection of the European natural heritage.



We really are numerous! (Photo Council of Europe)

Nature

A constant fight Ten years of the Centre

Marc Segers

The Council of Europe's Information Centre for Nature Conservation is ten years old.

Its anniversary is worth a pause for reflection — partly, of course, to salute the Centre's many achievements — but even more to examine its activities and results with a critical eye.

It cannot be disputed that man needs nature.

It is equally self-evident, in our densely-populated countries that nature cannot be preserved without human agency.

It is the duty and the responsibility of us all to safeguard our natural resources, which have been permanently jeopardised by the highly technological society in which we live.

Before any constructive work can be begun, however, people must be adequately and intelligently informed, they must be made aware of their duties and motivated to undertake responsible action, even if it means sacrificing a little of their comfort and giving up a few of their facilities.

At first glance it may seem surprising that the Council of Europe should make an appeal to public understanding and as-

sistance: after all, it is an international organisation set up by the governments themselves, which are in authority and are supported by parliaments that have been elected by the entire population. Why cannot it act directly upon the political authorities and influence them at the highest level?

To assume that the protection of the natural environment can remain the exclusive concern of governments and specialists would be a dangerous mistake.

Our imperilled nature is affected by the behaviour of all, but all means every single one of us. Love and respect for it arise out

of a deep conviction which incites us to commit ourselves to its defence. Once this commitment has been understood and accepted, it cannot be passed on to "the others".

On the contrary, it must be actively expressed at every level and in all circumstances.

Unfortunately, the general public has not reached this stage of awareness. More than ever, an unceasing effort of education and information is necessary, in fact indispensable.

This is the weighty, never-ending but inspiring task which has been undertaken by the European Information Centre for Nature Conservation.

A project on a European scale

For those of us who have not been involved in the Council of Europe's nature conservation activities from the outset it may be as well to recount briefly the circumstances and motives which prompted the Committee of Ministers to set up a European centre for information on nature protection.

The Council of Europe was the first organisation intended for specifically European co-operation and it was also the first to pay special attention to nature conservation and the protection of the natural environment.

A Committee of Experts for the Conservation of Nature and Natural Resources was set up and met for the first time in 1963, in Strasbourg.

At first, the Committee was mainly concerned with the specifically biological and aesthetic aspects of the environment in its natural state, but beginning in 1966 its horizons gradually widened to include the protection of the whole of the natural environment. At this point, the Committee became "European" and was thus placed on an equal footing with the other activities of the intergovernmental programme.

The experience acquired during those early years clearly established the fact that before effective international co-operation could be instituted and the obstacles encountered by governments in trying to carry out measures which were inevitably restrictive and unpopular, could be overcome, it was absolutely essential that European public opinion be made more fully aware of the extent of the degradation of the natural environment. The setting up of an information centre directly dependent upon the European Committee, together with the decision to launch an extensive campaign to "sensitise" public opinion in 1970, in the form of a *European Conservation Year*, have both very definitely helped to create an awareness of ecology in European countries.

It is universally agreed that 1970 was the real starting point of the fight for a better environment. The very term "environment", seldom heard before, was soon on

everyone's lips and in everyone's articles, showing how widespread is the interest taken in our natural surroundings.

At first, however, the Information Centre did not have an easy time of it: given relatively limited resources, and representing by its very structure a novelty within a large international organisation, the Centre strove hard and doggedly to make itself heard and set its course.

As the product of a desire to achieve some practical results in international co-operation at the level of information, the Centre was given a two-fold task from the outset: to act as a clearing-house in the dissemination of information and educational and propaganda material; and to foster joint information projects. These tasks, by virtue of the ability and tenacity of its supporters, the Centre has gradually performed and enlarged upon with the passing years.

Its efforts have borne fruit. The value of the Centre has been recognised "on high", for once its effectiveness had been demonstrated it was established as a permanent organ of the Council of Europe.

A network

In order that each country should be able to benefit from the experience of others, the Centre was supplemented by a series of liaison agencies appointed by governments.

The "National Agencies" in member countries of the Council of Europe and its "Correspondents" in several other countries form a full information network.

These points of contact, distributed throughout Europe and beyond, are the Centre's antennae and extensions, the essential gears of the system, receiving and

redistributing booklets, articles, posters and sundry other material from the Council of Europe at the same time as they continue to gather information within their countries and pass on to the Centre anything of interest to the rest of Europe.

In order to do this the Agencies must be in close touch with ministries, universities, private associations and all other relevant bodies.

Although the Council of Europe is essentially intergovernmental, in terms of organisation various procedures were followed in selecting the agencies and correspondents. Most countries asked administrations or ministerial departments directly responsible for nature conservation to perform the tasks, but others preferred to put their trust in well-structured private associations or leagues which had greater flexibility and independence of action. The advantage of this diversity, since public and private bodies usually operate in complementary fields, is to bring a broader and more comprehensive range of information into the Centre.

The activities carried out during the past decade by the Centre and its associated agencies and correspondents have aroused keen and steadily increasing interest in the public.

It would be superfluous to go into the many aspects of these activities at greater length for the readers of *Naturoipa*, who are front-row observers and have had ample occasion to appreciate them. It will be more worthwhile to try to define the attitudes of the members of that many-featured audience upon whom we are calling for help.

A society of nature-lovers

Can we ever quench our thirst for knowledge, our desire to go on learning more

Is the future so black?



Nature

A constant fight

and more about untamed and fascinating nature, now becoming dangerously hard to find?

For us to be so far removed from simpler and more tranquil joys that plants and animals have become so foreign, remote and unfamiliar to us, our way of life must be artificial indeed — ever more artificial and hectic — confined to over-crowded, noisy, pollution-rife cities.

This new and most understandable surge of interest for living nature holds out great hopes for the future; but it involves certain risks as well, as those who manage and guard the nature reserves, the last bastions of untouched nature, know only too well.

The citizens of this ending century, living ever more remote from large uncultivated tracts and having gradually lost all touch with nature as it really is, often do not know how to behave when they meet it.

It is not surprising, therefore, that the protectors of nature who have long cherished a reverent admiration for the many facets of our biological heritage should contemplate this massive awakening among the public with conflicting emotions. It is at once significant and distressing that the most authoritative experts have felt obliged to recommend moderation in the publicity given to the natural reserves

which have received the Council of Europe diploma — and nothing could be more stringently protected than they are — because of the overwhelming crush of visitors.

This shows how subtle and full of pitfalls is the path that information must tread. It also shows that education has an irreplaceable role to play at every stage in the educational process, but especially among the youngest, by introducing them to the beauties of nature and encouraging awareness of the living world.

This kind of "mesological" education seeks to demonstrate the close relationship between man and his environment, the aim being to prepare the way for the growth of a favourable attitude towards protection; it will undoubtedly come into ever wider use.

For the time being we cannot disregard the fact that the very concepts of nature and wildlife are given widely different interpretations, sometimes leading to positively contradictory approaches.

The crusaders seeking to save what is left of nature in its original state know that the methods of persuasion they employ will change radically, depending on whether their audience is a public of city dwellers or country people, to mention only one example. Many of the views frequently expounded in nature conservation circles are built on distinctly urban assumptions. The myth of a virginal nature evolving in obedience to its own laws without any human intervention is extremely widespread and tenacious. When we turn to more subtle concepts such as biological balance, the relationship between animal conservation and the practice of game

shooting, the role of the forest in a region's hydrological system and many other subjects which periodically come up for discussion, all we can do is observe the extent of the confusion. It is in fact difficult to reconcile different viewpoints, too, for they are often subjective and thus tend to be over-emotional.

Side by side, we find the people who are longing to get back to nature, nostalgic for the past and ancestral agricultural customs, those — the larger number — who go to nature only in search of clean air and space, the fervent collectors on the trail of some rare species, and the lovers of a more disciplined and cultivated nature such as we rejoice to meet in city parks and gardens, the lungs of our conurbations.

This being the case, no task can be more urgent than that of devising a coherent doctrine and ethics of nature conservation which can fit into a total vision of the relations between man and nature. It must be admitted that in many cases such a doctrine and ethics have yet to be created.

It has been said again and again that the information used in education aimed at improving the protection of nature must be scientifically sound, objective, and framed in terms of the bonds of fraternity between man and nature and between all the peoples of the planet, for all are responsible for the shared heritage which is not given but only lent to us.

But perhaps it has not been said often enough that a satisfactory attitude in a group is a mere illusion unless there is commitment of its individual members, and that commitment does not come from the reason only, but from the whole person.

Nature's cause has always counted among its most ardent supporters a large number of disinterested scholars, whose duty is to denounce the anomalies and absurdities of a civilisation geared to profit making and technocracy, which are sure sources of danger for man's future.

It can also rely on all who have had the privilege of experiencing and understanding the psychology and treasures of natural environments.

Animals and plants are the essential companions of our lives, they bring us together and fascinate us by the extraordinary wealth of their components and lifestyles.

Those who have been happy enough to live with and love the reality of the living world respect nature and the environment and treat them with that benevolence which it is for us to communicate to others.

By carrying on their unstinting effort of information, the Centre and its agencies and correspondents are most certainly helping to enlarge the sphere in which that attitude prevails.

The survival of nature tomorrow may depend upon the attitudes we help to form today.

M. S.



(Photo Jan van de Kam)

Vote for the environment

The Centre's campaigns

Mario F. Broggi

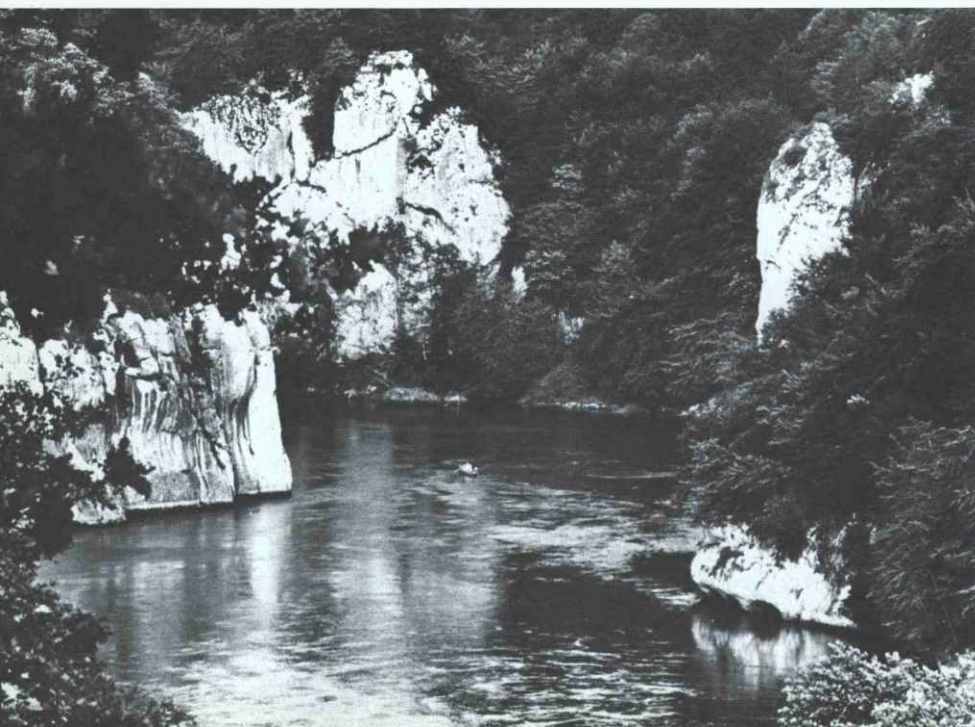
Introduction

In recent years the Principality of Liechtenstein has broadened its foreign policy activities at multilateral level by increasing participation in a number of international organisations. For Liechtenstein, as a democratic European state, one of the most important of these organisations is without doubt the Council of Europe, to which Liechtenstein was granted official observer status in 1975. Since 1970 Liechtenstein has taken part in the work of the Information Centre for Nature Conservation and in its campaigns and made original contributions.

When Liechtenstein takes an active part in a European campaign contact with the

groups involved is naturally very close and intense. The authorities and other leaders of public opinion such as politicians, educators, journalists and association chairmen, as well as broad sectors of the population are within easy reach. In connection with the current campaign we were therefore able to distribute an abundantly illustrated booklet on the importance of wetlands to every household in the Principality. At the same time, as such a small state does not have the same higher education and scientific research facilities as other states, it must learn from the latter's experience. This has induced us to observe nature conservation activities in Europe with particular attention and to follow closely the progress of the "European Campaign for the Protection and Management of Wetlands".

Live in harmony with nature: such is the mission of the Council of Europe. The "Weltenburger Enge" in Bavaria — candidate for the Council of Europe's European Diploma (Photo Landratsamt Kehlheim)



1970 — The beginning of the nature conservation campaign in Europe

Public relations specialists have noted that the "European Year for Nature Conservation 1970" was on the whole one of the most successful campaigns ever undertaken on behalf of an idea. The time was propitious. Nature conservation, hitherto overshadowed by other social considerations, received fresh impetus from new motivations: environmental pollution was brought home to everyone, the idea of progress underwent a change, doubts arose as to whether technology could effectively ensure the quality of life; all these developments paved the way for the successful emergence of a new concept. No doubt one of the Council of Europe's most important contributions has been to have provided the necessary impulse. Although preparatory work took considerable time, an Information Centre for Nature Conservation was set up for the purpose. Its subsequent success eventually justified the expense incurred. The Centre, which has established contacts extending from Iceland to Finland and from Portugal to Cyprus and beyond, could no longer be dispensed with. It has in the meantime taken firm root for the benefit of nature conservation in Europe.

If all these "Years" are not to represent so much wasted effort — further "Years" have followed in other sectors — and are not to remain a dead letter, considerable preparatory work is required, as the experience of 1970 has made clear. As a result, a second, less labour intensive scheme was skillfully drawn up, namely that of conducting regular environmental campaigns for the information of the authorities concerned and the public at large.

Thus in 1972 the "Soil Charter" was promulgated and in 1974 the "Water Charter".

Regular European environmental campaigns

It may have taken some time to determine precisely how the new scheme was to be effectively put into operation. It was perhaps because of the somewhat technical nature of the subsequent themes, that the first two campaigns met with only modest success. By campaigning, for instance, for a sewage plant we may be appealing to reason, but it will hardly arouse much public enthusiasm. The response is better if we talk about tree frogs or water lilies whose habitats are threatened.

This leads us to try to analyse the success of the third campaign. Why has precisely this one been successful, as the preliminary results already indicate?

The European Nature Conservation Year 1970 and growing public environmental awareness have drawn attention first of all to technical environmental protection. Air, noise and water were somehow easier to apprehend than ecological interrelationships, which invariably have the inherent disadvantage of being difficult to quantify and thereby weaken the basis for discussion. What is gained from the existence of a swamp, or what is the outcome of the loss of a wetland? How can success be achieved despite the difficulties of presenting the case?

We propose to try to analyse the reasons underlying the success of the current Wetlands Campaign for the benefit of future campaigns. Let us begin with the choice of themes which has a decisive bearing on success or failure.

Tentative analysis of the current campaign

Observations concerning the choice of themes

Every campaign theme must be topical in all parts of Europe. The Wetlands Campaign met this criterion admirably. Throughout Europe, from the sparsely inhabited regions of northern Scandinavia to the Coto Doñana at the mouth of the Guadalquivir River in the south of Spain, wetlands and their flora and fauna are threatened. All the national agencies and correspondents of the Centre accordingly took up the concepts of the 1976 theme with enthusiasm and set about spreading them throughout their respective countries.

Where, however, a theme is of doubtful interest to some countries, its success on a European scale becomes problematical. A campaign to protect European seashores, for instance, would find little response in Austria, Switzerland or Luxembourg, or the interior regions of larger countries. There would be too little identification with the problem.

Environment campaigns of the Council of Europe should be concerned preferably with questions whose content is not generally recognised. With its nineteen member states and observer countries and organisation the Council covers a wide geographical area and is consequently in a unique position to give impetus to campaigns. It did so for wetlands and showed that "living space" was not tantamount to useless land. The term "living space" is composed of "living" and "space"; and if space is destroyed, the life in it is de-



The iris (*Iris sibirica*) — beauty bordering on the exotic, a pleasure for all who know how to appreciate it (Photo M. F. Broggi)

stroyed too. The "wetlands" theme provided an excellent means of showing these ecological relationships. As a final observation concerning the choice of themes, once chosen, a theme has to be "sold" to the target groups; it must lend itself to being attractively packaged and presented. This was undoubtedly true of the 1976-77 theme. A consistent, well-designed publicity campaign is something relatively new in nature conservation. For too long nature conservation was somewhat old-fashioned, more concerned with complaining than gaining influence. Until recently nature conservation magazines

were rather badly made up and somewhat lacking in imaginative thinking. In this respect the World Wildlife Fund deserves high praise. Its very emblem — a panda — was a success. None of the information media should be neglected in efforts to gain the favourable attention of the public. The Council of Europe has provided itself with a satisfactory medium in the form of *Naturoopa*. An outstanding example for German speaking countries is the magazine *Nationalparke*, published in Germany; it presents its material in an attractive and readily understandable manner. In connection with the current campaign, the

Swiss *Bund für Naturschutz* has issued a book entitled *Leben am Wasser*, whose layout also deserves to be mentioned.

The public and its target groups

The purpose of our campaign is to bring about a particular human attitude or action. At what sections of the public should, to this end, the campaign be aimed? A number of smaller "publics" can or must be approached. It often happens in everyday life that nature conservation action is taken "too late". A measure may have already received official approval or be in operation before nature conservation bodies learn of it. One of the most important target groups is, therefore, government authorities. Because of those authorities' efficient organisation, peoples everywhere must in practise yield to them some of their rights, whether we like it or not.

The most important target groups from the nature conservation standpoint are hydraulic engineers, farmers, development agencies, forestry services, highway engineering departments, regional planners and all other officials whose activities may affect the environment. Their understanding of nature conservation or lack of understanding is in the end of decisive importance for the environment. A further group of decision-makers to be taken into account are parliamentary representatives and executive bodies at all levels, including community officials. In practice it is often the community which takes the decisions we are concerned with.

The 1976-77 Wetlands Campaign is designed to reach, not only the general public, but also all who represent public opinion: journalists, politicians, educators, the clergy, trade union officials, scientists, and groups and associations having similar objectives. As the most lasting impressions are those received early in life it is important to influence school children, apprentices and students, and, by the same token, teaching staff. A carefully co-ordinated action programme must therefore be worked out if all target groups are to be reached.

Action programmes and national authorities

In retrospect the themes preceding the Wetlands Campaign were very valuable since they enabled us to gain experience and to establish broader contacts — which it is important to maintain. The success of a campaign depends upon the extent to which we commit ourselves and the importance we give to it. Inadequate communication between the Centre, national agency and national correspondent generally militates against achieving optimum results in the country concerned.



"Wetlands are never wastelands" — Wastelands may become wetlands: an artificial wetland under construction in tiny Liechtenstein which disproportionately contributed to the success of the Council of Europe's wetlands campaign (Photo M. F. Broggi)



of the significance of maintaining wetlands (Germany, Ireland, Italy, Liechtenstein and Malta).

The Wetlands Campaign was used as an opportunity for promoting international conventions, above all the Convention of Ramsar, for getting them signed or implemented (Belgium, Denmark, Germany, Italy, the Netherlands, Switzerland and Spain), or for promulgating relevant national legislation (Italy and Malta). Symposia and conferences were held on the establishing of, and maintaining wetlands in many European countries (Belgium, Germany, France, the United Kingdom, Norway, Portugal, Sweden and Turkey). Another practical achievement was that in almost all countries additional nature conservation areas were established.

Radio, television and the press played an important part in broadcasting information. Germany, Liechtenstein, Portugal and Turkey issued commemorative stamps; Denmark and Greece adopted special postmarks, and in Ireland overprints were used to publicise the campaign.

Books, booklets, handbills, signs, stickers, posters and other materials were prepared to spread the message in every country. Private nature conservation bodies appear to have been particularly active. They sought to inform their members by means of the above-mentioned media, or by holding exhibitions, publishing specialised articles in their house literature and conducting field trips. In some countries the wetlands operation was accompanied by fund-raising campaigns for the purchase and upkeep of land (United Kingdom, Liechtenstein and Switzerland); in Luxembourg a lottery was held.

Schools were a prime target. The importance of educational action was reflected in posters and booklets, and in the institution of youth camps, competitions and information centres. This gives a brief, though incomplete, idea of the manifold efforts undertaken in the various European countries.

Outcome and prospects

Measuring the impact of a campaign would necessitate comparable studies being carried out before and after the publicity campaign. Differences in the results would provide a yardstick for measuring public success. A possible criterion might be the "degree of familiarity" with the campaign. As far as the writer knows, no such enquiries have been carried out. Consequently the reactions of the various agents and correspondents, familiarity with the many-sided information material provided by the Centre, and the writer's views are based on his personal observation in several countries. The outcome indicates that the national agents were, if anything, surprised at their own suc-

cess. In the Swiss — Austrian — Liechtenstein triangle I was struck by the broad coverage given by the local newspapers, particularly in readers' "letters to the editor" columns. Generally speaking, short interviews, pictorial reports and brief articles made a more lasting impression than more lengthy reports.

All these observations indicate that the public at large has become aware of the problem of wetlands, an achievement which was, after all, the main purpose of the campaign.

Some agencies have included suggestions for future campaigns in their provisional reports. They note that as the exercise was proving successful, the period covered became longer and financial expenditure greater than expected. Some collaborators therefore recommend a longer span of time than the two year period observed up to now. In most countries, ad hoc groups were set up to co-ordinate the action programme. These contacts continue to be at our disposal and only need to be slightly adjusted to fit in with the campaign theme. A preparatory period is, however, necessary for the development of new programmes and for further contacts with associations.

A suitable choice of theme, smoothly operating Centre — agency — national committee exchanges and effective co-operation with private organisations, together with mobilisation of the media, will in the long run produce a new way of thinking in all spheres of the European population. This is, moreover, the main purpose of these campaigns.

M. F. B.

Youth and environment

Lutz Katzschner

International co-operation among the young

The principle goal of the International Youth Federation for Environmental Studies and Conservation (IYF) is to create enthusiasm among youth for the protection of the environment. It is sought by means of out-of-school education to familiarise them with ecological problems and environmental preservation concepts: through their observations in a wide range of fields such as botany, ornithology, entomology, limnology and above all ecology, IYF members are given the necessary background for working out suggestions for solutions and then putting them into practice. Such research also broadens knowledge of the often highly complex relationships between man and nature. This provides our organisation with a further opportunity for developing practical alternatives. The IYF is aware of the

importance of international co-operation. Environmental pollution is no respecter of national borders, nor do ecosystems follow state boundaries. The Wadden Sea is an example of the special tasks our organisation has to tackle. IYF projects in Germany, the Netherlands and Denmark have highlighted the ecological importance of the Wadden Sea and clearly established that the remaining problems can only be solved by all three governments working together towards a common end.

Since 1956, when the IYF was founded in Salzburg, membership has increased considerably. The need for international co-operation was realised by similarly oriented youth organisations in thirteen European countries which have accordingly joined forces in the IYF. Language forms the basis of the five European regional groupings of IYF member organisations, of which there are often several in a single country. The fact that the International

Young volunteers cleaning up a village pond — What pleasure and what good results! (Photo British Waterfowl Association)



The Centre may function as an "ideas factory" and supply carefully worked out educational material and proposals; it may also act as a clearing house for information; the work itself, however, must be carried out in the individual countries.

Starting from the Council of Europe's proposals, each country has drawn up its own action programme and set up committees to put the various projects into effect. In most countries, private organisations are co-operating fully in the campaign. If a federative association such as the German *Naturschutzring*, with over three million members, or forty-six organisations, as in the United Kingdom, take part in the co-ordination discussions for the current campaign, large sections of the population are reached. The constructive participation of relevant private organisations is essential if a widespread audience is to be reached.

Widespread publicity and public relations promotion

A rational publicity campaign for nature conservation and protection of the environment can be successful only if carried out at several levels. A study of the programmes and activities in individual European countries shows that the present campaign is directed at a highly diversified audience, which means that in practically all countries the public at large is reached.

In connection with national nature conservation activities, the campaign has provided an opportunity for taking stock of the situation. Inventories have been drawn up of wetlands deserving protection (Germany, Italy, Luxembourg, Austria, Sweden, Spain and Turkey) and surveys made

Youth and environment

activities. They are appointed at the annual plenary meeting by the delegations of member organisations. The plenary meeting constitutes the highest level in the decision-making process and this year is scheduled to be held in the Black Forest in Germany.

Camps are particularly important

As already mentioned, most IYF work is done by local groups, which in turn have their own working parties for the various fields. The IYF organises approximately 400 youth camps every year, all of which are open to foreign nationals. Camp activities range from a simple introduction to some field to specialised naturalists' work.

Sometimes nature findings are not only written up but also provide the basis for direct environmental action. After observations are made, problems are identified and discussed, with the campers themselves then proposing solutions. In other cases public campaigns are conducted. We are fortunate in having the facts available from which we can build up a clear picture of the problems, and in knowing how to orient our activities in order to effect change.

IYF Intercamps also play a key role. They differ from ordinary camps in that a specific theme, such as wetlands, is selected and then worked up by an IYF officer, usually the project director. Lectures are given on the best way of tackling the various aspects of the problem and what type of nature activities would be most suited to the purpose. This year, two camps, one in France and the other in Germany, are holding a symposium on IYF theme of the year: "Farming". These arrangements give an additional opportunity for the theme of the year and at the same time collecting practical tips. At these camps guidelines can also be worked out on a practical basis which means that the participants can subsequently turn them to good account.

Each year a course is arranged for European youth leaders. It offers leaders of member organisations further training in ecology, environmental studies and conservation strategies, laying emphasis on the importance of co-operation. The focus is mainly on working methods which young people will afterwards be able to apply in their own organisations. Introduced by the IYF in 1956, the course has been constantly improved over the years in the light of experience. At the same time, many member organisations now hold their own national courses, which further enhances the quality of IYF activity.

Each year the plenary meeting selects a number of IYF projects. These become the main themes and most important problems dealt with by the IYF in the following year. At present projects are under way concerning energy, whaling and sealing, the Wadden Sea and acid precipitation in the Scandinavian countries.

The broad range of problems makes it necessary to select a number of main projects in order to establish certain priorities, but they are not exclusive.

Top priority goes to the theme for the year which in fact extends over two years and is currently "Farming". Every member organisation participates in a theme-related activity in order to ensure maximum impact.

Supporting publications

In order to promote its activities, the IYF brings out a series of publications designed to assist members in their work. A permanent working group on education collects the publications of member organisations, stimulates interest and produces new books and manuals. With a view to launching a project effectively, it is always preceded by the publication of a detailed manual. For day-to-day group work brochures have been printed such as *An Introduction to Ecology, Plant Sociology and Methods in Field Biology*. Topic Sheets, which appear in five languages, are specifically designed to stimulate discussion in local groups studying a special area of topical interest within the IYF. They may range from "Energy" to "Teach yourself Field Biology Methods". In addition, every IYF organisation has brought out its own key for the identification of plants, mammals, insects and aquatic life; these have all been collected in one volume by the IYF with references to titles and sources.

The IYF reaches the general public through its magazine *Taraxacum*, which appears three times a year and presents IYF views on various subjects. In addition the IYF has summarised the Youth Conference on Environmental Problems in a book entitled *Youth and Environment*, which gives a comprehensive description of the IYF's role in environmental education.

Effective co-operation is essential for better protection of the European environment, since not even complete nature conservation in one country would be sufficient to guarantee preservation of the environment in the long run. The IYF performs an important service by disseminating this idea among young people, particularly outside school, an activity for which it is structurally well suited. As the IYF draws on a wide range of ecological documentation, it is able to propose alternatives which encourage young people to join. Even at a time when the IYF has scarcely sufficient funds to enable project directors to meet with members in other countries, we have been able to keep all our members active and have been increasingly successful in persuading others to work with us.

As a result, we look to the future very optimistically, so let our final word also be our motto: keep your boots muddy. L. K.

unknown... unloved... threatened...



René Honegger

The alarming decline in animal life in Europe has been brought home to the public during the past decade by a growing body of documentation, *inter alia* the "Red Data Books". These now include not only birds and mammals but also amphibians and reptiles, creatures which have hitherto stood lowest in public favour and whose retiring habits make their proper study difficult.

Recently there have been increased reports of a serious decline in amphibian and reptile populations. At least thirteen of the forty-five amphibious species found in Europe are endangered or even threatened with extinction. Forty-seven out of one-hundred and ten European reptile species must be regarded today as threatened or endangered.

Despite strict nature conservation legislation in Switzerland, the great crested newt, the yellow-bellied toad (locally), the green toad, the European tree frog, the Italian frog, the green lizard, the Aesculapian snake, the asp and adder (locally) are

all species whose existence is threatened. In the Zürich region the population of great crested newts dropped by 75% between 1946 and 1972.

Recent surveys carried out in the Federal Republic of Germany by von Blab and Nowak place 66.7% of the reptile population and 63.2% of amphibious creatures in the endangered categories of the Red Data Books. Five reptile species — the European pond turtle, the green lizard, the dice (or tessellated) snake, the Aesculapian snake and the asp — are directly threatened with extinction in the Federal Republic. Even species which were formally classified as common and widespread, such as the grass frog, the common toad and the sand lizard are now only found sporadically and occasionally throughout large areas of their range.

A thorough analysis of the threat to European amphibians and reptiles has long been greatly impeded by persisting gaps in basic research, particularly the lack of field biology data and population-ecology information. For the preparation of this paper the author was referred to the writings of a great many herpetologists in Europe. At the same time, an exceptionally wide-ranging literature had to be sifted and evaluated, and field trips made in order to collect material on individual species.

What causes have led to the international decline of amphibians and reptiles in Europe?

Habitat destruction

The main reason for the alarming decline of these species is plainly the continued destruction of their habitat. In most European countries the biotopes of amphibians and reptiles, particularly wetlands which serve as spawning grounds, are disappearing at such a rate that it would be fair to speak of indirect extermination. Pools and ponds with a continuous or intermittent supply of water have been the principle victims of destruction in recent decades:

— In Switzerland alone, 90% and in some areas 100% of existing wetlands have been drained in the past 150 years.

— The building of national highway 13 in the Chur Rhine Valley between 1953 and 1959 destroyed some 66% of the breeding

waters of the Alpine newt, the common newt, the yellow-bellied toad, the common toad, the tree frog, the green frog and the grass frog.

Recently, increased efforts have been made to provide alternative biotopes by creating ponds and marshes. Population transfers which have not been preceded by careful ecological planning can, however, have an extremely deleterious effect on species which such measures are intended to protect. If the topography or chemistry of the alternative pond is not suited to the transferred species, the animals wander off in search of a suitable biotope and perish in an unnatural environment.

Losses caused by road traffic

Every year during the spring migration to their spawning grounds, thousands of amphibians are run over while crossing roads and thus fail to reproduce.

The spectacular mass slaughter of well known species such as the grass frog, common toad and various kinds of newt has recently led to emergency action being taken in many European countries. Fences are built to prevent migrating creatures from crossing roads; they are then gath-



2

ered up and safely transported to their spawning grounds.

Despite such often quite costly measures some amphibian populations continue to decline. This is linked, at least locally, with the fact that the far less impressive return migration of toads and grass frogs attracts little or no attention, and that without pro-

tection a large part of the adult and juvenile population falls victim to road traffic.

One solution to the problem could surely be to fence off permanently both sides of roads crossed by spawning amphibians and to build tunnels, particularly where new roads are being put through.

Fortunately, highway authorities are showing understanding for this important task. Recently, for example, the Swiss Association of Civil Engineers published detailed instructions for constructing amphibian underpasses.

Adverse effects of pesticides

The use of pesticides and herbicides constitutes a serious threat to the entire amphibian and reptile population. Although bad experiences with DDT have shown the danger of this pesticide, poisons are still in widespread use today whose effects are non-specific and which may directly, or unselectively through the food chain,

harm all animal species living in the affected area.

Unfortunately we still lack precise quantitative data from field experiments on the effects of biocides on European amphibians and reptiles. Nevertheless, a large body of individual data shows unmistakably the manifold harmful effects they have on these species.

Laboratory tests in the United Kingdom have shown that grass frogs which come into contact with DDT products have an increased tendency to remain out in the open as opposed to seeking cover.

A comparison of the time spent in the open by an affected grass frog with that spent by a normal one shows that the former is

much more likely to become the prey of a bird, snake or mammal.

In 1958 the French herpetologist Knöpffler counted more than 5 000 dead Mediterranean tree frogs which had perished from the after-effects of a single anti-mosquito campaign in the neighbourhood of Hyères.

Waste water containing herbicide residues which flows into unpolluted water may harm and even wipe out the fish and amphibian population. The poisonous substances contained in herbicides attack the outer protective layer of aquatic animals in such a way that fungus also present in the water — saprolegnia — can gain a hold on tadpoles and fish and eventually kill them.

Laboratory tests have also shown that relatively low concentrations of metals such as

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Examples of constant threats which weigh on amphibians and reptiles: loss of habitat (1) over exploitation for various commercial ends (2) and continual growth of road traffic (3) (Photos H. Heusser (1 and 3) and R. Honegger (2)).





1

*unknown . . .
unloved . . .
threatened . . .*



8



2

3



6



7



5



4



unknown...
unloved...
threatened...

ends is disastrous for the species involved, as the following authentic examples of trade practices show:

— As early as 1928 tens of thousands of tree frogs were shipped to England from the Mediterranean area.

— Today the vast quantities of amphibians and reptiles — including some very rare species — imported from Yugoslavia and Turkey constitute the main items of European trade in animals.

— Switzerland's accession to the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora has produced revealing data on the import of amphibians and reptiles from abroad: between 1 July 1975 and 31 December 1975, 61 864 kg. of green frogs were imported from Turkey, Bulgaria, Hungary, Yugoslavia and elsewhere. In 1976 the figure reached 69 167 kg. With an average weight of 80 grams per specimen this meant that in 1976 more than a million green frogs were imported into Switzerland for eating.

— In the same year the Greek Government approved the export of 2.2 million green frogs for the luxury food trade. Between 1968 and 1970 Italy exported more than 47 million frogs and toads. The main markets were the animal trade, schools and scientific institutes throughout Europe — not to mention Europeans who will not go without culinary delicacies.

— In 1971 Yugoslavia alone exported 400 000 European tortoises.

The introduction of exotic animal species

The introduction of exotic species or species from other biocenoses has had extremely adverse effects on mammal and bird populations. Such attempts, usually commercially motivated, to acclimatise new species are attended by the greatest danger for native amphibians. A single 50 g. carp or goldfish introduced into water where it is not normally to be found can destroy the entire spawn — about 3 000 eggs — of a grass frog.

— The gambusia, a fish introduced to combat malaria, has partially exterminated a sub-species of the common newt in the Venice region and in Sardinia the Sardinian mountain newt.

— Sunfish introduced into the Saar wiped out the great crested newt population. The American bullfrog, introduced into northern Italy, acclimatised itself in the Po Valley and now constitutes a serious threat to the indigenous amphibian and reptile populations.

— In the course of a nature conservation operation in the Zürich area to save amphibious populations threatened by wetland reclamation, marsh frogs were indiscriminately transferred to new biotopes where

they have now developed into the dominant species. It would thus seem to be a matter of urgency that specialist studies and planning should precede all acclimatisation projects.

Losses due to human prejudice

In earlier times reptiles and amphibians were commonly regarded as undesirable animals. There is no lack of examples to show that these lower vertebrates fell mass victims to human prejudice. Even today, however, direct persecution at the hands of man seems to be one very definite reason for the diminishing numbers of all apodal reptiles (snakes and blindworm):

— The killing of Schweizer's Lebetina viper on the island of Milos in Greece is encouraged by the payment of a bonus for every dead viper. At the same time innumerable other indigenous reptiles are slaughtered on the erroneous assumption that they too are poisonous.

— A book was published in Turkey as late as 1963 which divided reptiles into two classes, venomous and harmless.

— Recent fishery manuals still unequivocally classify aquatic reptiles, such as the European turtle, as pests.

— Counts made in three south German districts in April and May 1975 along footpaths (i.e. not roads carrying traffic) tallied 357 beaten or trampled reptiles.

The following imperative measures must accordingly be taken in order to prevent a further drastic decline in amphibian and reptile populations:

— Work on the present state of inadequately researched species must be given support and more ecological studies must be carried out in order to provide the support data needed for effective official measures to protect habitats and species.

— All endangered species should be placed under the protection of the law and care must be taken thereafter to ensure that the regulations laid down are obeyed.

— It is essential to create more reserves, to act as "ecological cells", with diversified plant and animal life (cf. the *Ecological Manifesto* of the Ecology Association in the Federal Republic of Germany).

— Effective measures, backed up by an appropriate mass media campaign to educate the public, must be taken against the senseless traffic in live amphibians and reptiles, particularly frogs, lizards and tortoises.

— The use of pesticides must be restricted in all areas; at the same time basic research must be intensified.

Purposeful enlightenment of the public and the authorities will do much to enable tangible success to be achieved in the protection of amphibians and reptiles, both at national and international level.

R. H.

Conservation and agriculture

Norman Moore

Originally, most of Britain was covered by forest, and, as in continental Europe, most of it has since been reclaimed for agriculture over the centuries. The difference between Britain and continental Europe is only one of degree: there is proportionally less land (approximately 8%) under forest in Britain than in most other European countries (see fig. 1). The reasons for this include the following related factors — climate, the wool trade, the former use of wood in shipbuilding and as a fuel in industry, and the absence of a significant national forestry policy until 1918, when the Forestry Commission was set up.

Modern farming: a revolution

Nevertheless, ordinary farmland supported a wealth of plant and animal species until quite recently. This was partly due to the practice of growing hedges throughout lowland Britain. These hedges included many trees and supported many woodland species. Even in 1962 there were about 990 000 km of hedge. Also most farms did contain some woodland, small marshes and ponds; and ordinary farming practices on arable and grassland provided suitable habitats for numerous other species. During the last thirty-five years farming has undergone a revolution in Britain which is having a profound effect on wildlife. The horse has been superseded by the tractor and other machines enable hedges to be removed and marshes drained with little difficulty. The poorer soils can be made productive by the use of artificial fertiliser. Nearly all weeds can be controlled by herbicides, and the harmful effects of fungal and insect pests can be greatly reduced by fungicides and insecticides. Most pastures and meadows have been made vastly more productive by

ploughing up and reseeding with domesticated strains of grass or by the use of fertilisers and selective herbicides.

The conservation implications of the agricultural revolution are particularly important in Britain because of the small area under forest. Two years ago the Nature Conservancy Council, which is the government agency responsible for setting up nature reserves and advising on conservation matters, initiated a special study of the problem. Its aim was to discover the extent to which modern agriculture was affecting wildlife, and then, by means of formal and informal discussions to determine the means necessary for conserving wildlife under the new conditions imposed by modern agriculture. The organisations consulted included the agricultural departments and other governmental departments and agencies, farming organisations, universities and voluntary conservation bodies. Finally, in March 1977, a paper was produced entitled *Nature Conservation and Agriculture*. It includes the Nature Conservancy Council's recommendations made in the light of the discussions held with the organisations mentioned above. This article outlines the main points in the Nature Conservancy Council's paper and briefly discusses its relevance within the European context.

Changing habitats and species distribution

The studies on changes in habitat area and species distribution showed that nearly all the habitats which are most important to wildlife, notably ancient woodlands, lowland heaths, marshes, bogs, and unimproved pastures and meadows, have declined in area. There were also consider-

lead and copper in the water may adversely effect the development of tadpoles and fish.

Tests performed in summer 1976 on frogs which had been imported into Switzerland from Turkey for eating revealed a mercury concentration of 0.2 ppm. and a lead concentration of 0.15 ppm.

Capture and trade

Capturing individual amphibians and reptiles for purposes of temporary observation or study does not affect a stable population, particularly if a school furthers educational ends by so doing.

On the other hand, removing thousands of individuals of varying ages from an amphibian population for purely commercial

Captions to colour illustrations

1. *Lacerta agilis* (Sand lizard) (Photo P. Brodmann)
2. *Proteus anguinus* (Olm) (Photo P. Brodmann)
3. *Vipera ursini wettsteinii* (French meadow-viper) (Photo P. Brodmann)
4. *Emys orbicularis* (European pond-turtle) (Photo P. Brodmann)
5. *Hyla arborea arborea* (European tree-frog) (Photo P. Brodmann)
6. *Bombina bombina* (Fire-bellied toad) (Photo P. Brodmann)
7. *Triturus alpinus* (Alpine newt) (Photo L. Jäger)
8. *Lacerta lepida lepida* (Ocellated lizard) (Photo P. Brodmann)



High grade land like this produces a large proportion of the nation's food. Nearly all of it is cropped and hence there is very little habitat available for most species of wild plants and animals. Fenland in Norfolk. (Photo Committee for Aerial Photography — University of Cambridge)

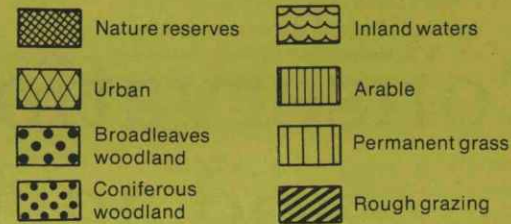
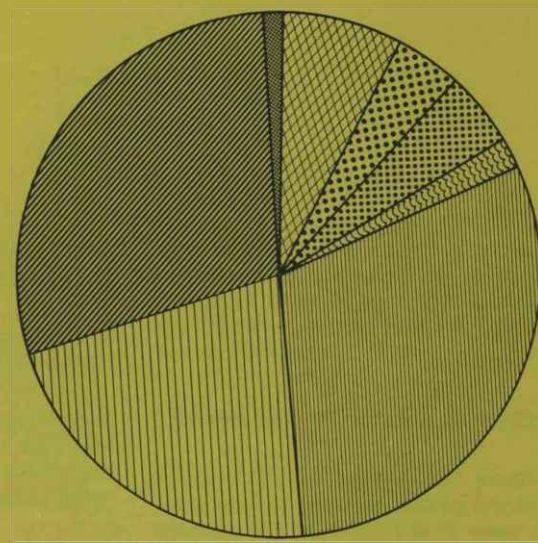


Fig. 1: Pattern of land use in Great Britain

Note: Nature reserves take up 0.8% of the land surface.

able reductions in upland moorland and in hedges. Some examples are given in fig. 2. The only significant gains in wildlife habitats have been those provided by the increase of disused water-filled gravel pits, verges of motorways and conifer plantations. In much of eastern England and parts of eastern Scotland, there are large areas of highly productive farmland which today only support a very limited range of common wildlife species (see plate 1). In other areas there is still a considerable amount of wildlife habitat, although it is being continually diminished (see plates 2 and 3).

The loss of habitat is reflected in the contraction of the ranges of numerous plant and animal species, which have been recorded by the Biological Records Centre of the Institute of Terrestrial Ecology. The decline of the 278 rarest British plants, measured by recording the decline in the number of the 10 km. squares in which they occurred between 1930 and 1960, was 30%. A specific example is given in fig. 5 and illustrated in plate 4. The decline of the pasque flower is due to ploughing up and renovating limestone pastures.

There is no doubt whatever that modern agricultural practices, including those of drainage and woodland management, are the principal causes of the numerous declines of wild plant and animal popu-

lations recorded in Britain. The declines in habitat are not being compensated for to a significant degree by the production of new habitats, except for a few adaptable species which can make use of water-filled gravel pits and conifer plantations.

Old fashioned farming always produced a rich by-product of wildlife; unfortunately modern farming does not do so. Until this unpalatable fact is recognised it will be extremely difficult to achieve both increased food production and effective wildlife conservation on the farm. It is important for conservationists to recognise that the declines of wildlife on farmland are not the fault of the farmer, for the government urges him to increase his productivity and he can only achieve this by intensifying his methods or by reclaiming land.

Solving the conservation problem

What can be done? Several possible solutions have been put forward or implied. Total polarisation of agriculture and conservation has been suggested: in this view conservation should be restricted to nature reserves and agriculture to farmland. Hundreds of nature reserves have been established by the Nature Conservancy Council and the voluntary con-

servation bodies. They contain representatives of nearly all the main habitat types found in Britain. But together they cover less than 1% of the surface of the country (see fig. 1). In a nation like Britain, which has a very high population density, it would be wholly impracticable to set aside enough land as nature reserves to maintain viable populations of wildlife by this means alone.

Another form of polarisation has also been suggested — that conservation should be restricted to poor marginal land in the north and west of the country — the white areas in fig. 4 — and no serious attempts should be made to conserve wildlife on the better land outside these areas. Such a policy might succeed for the minority of species which can survive on impoverished moorland and, in those habitats in areas with poor soils and a poor climate, but many species (including the pasque flower, see plate 4) are dependent on the same soils and climatic conditions which favour the growth of cereals and other crops. Such species cannot be conserved on marginal land in the north and west.

Others have suggested that the problem cannot be solved by direct measures, and that its solution lies within the field of education. Indeed much has been done with universities, schools, farming insti-

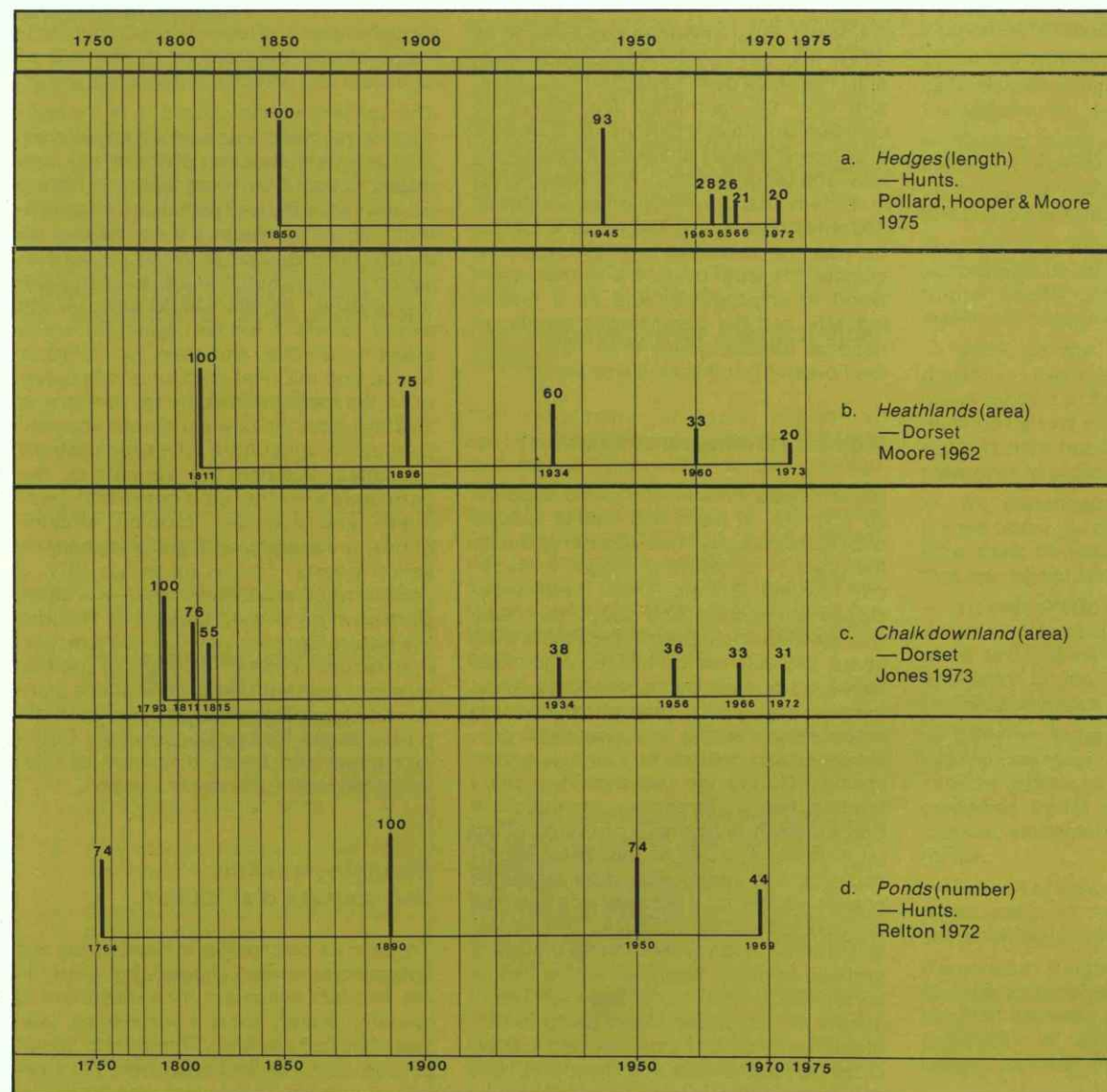


Fig. 2: Examples of habitat loss in lowland England (All values are expressed as percentages of largest value recorded in each case)

The loss of old pasture, hedges and trees on the side of a deserted mediaeval village — Northampton (Photo Committee for Aerial Photography — University of Cambridge)

Before reclamation, 1963



2 After reclamation, 1965



3

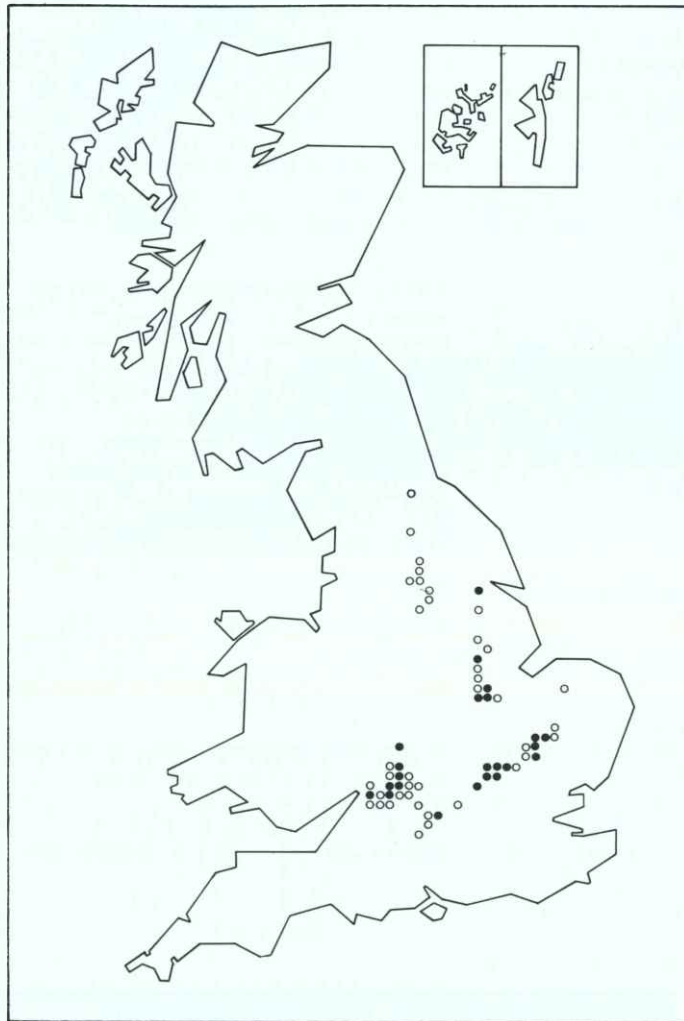


Fig. 3: Reduction in the range of species related to habitat loss. Pasque flower (*pulsatilla vulgaris*) (Photo Nature Conservancy Council)
 ○ Recorded before 1950 but no longer present
 ● Recorded before 1950 and subsequently, or first recorded since 1950 and presumed present before that date

Conservation and agriculture

tutes and with the agricultural advisory services to educate people about environmental matters, and to promote constructive dialogue between farmers and conservationists. Yet, despite a very real and desirable shift in opinion, especially among younger people, there is little evidence to suggest that education can produce the changes quickly enough to conserve wildlife: the economic and fiscal forces which operate in the opposite direction are too strong. Something more than education is required.

In recent years modern methods of farming have been criticised on the grounds that high productivity has been achieved through the excessive use of fossil fuels and that insufficient use has been made of biological methods. However, in the present state of knowledge, it would be impossible to maintain today's high yields without using today's methods. Further, the introduction of biological control and more diverse cropping patterns would be much less beneficial to wildlife than many believe, because they would not increase

the area of uncropped habitats on the farm. It is these areas rather than the croplands which provide the habitats for most species of wildlife. Since the proposed methods would almost certainly be less productive, their adoption would probably make it necessary to reclaim yet more of the uncropped wildlife habitats, and thus have the opposite effect to that intended.

A mixture of measures

The Nature Conservancy Council's conclusion is that increased agricultural production must be met by further improvement of farming methods on the better land, rather than by reclaiming the last reserves of uncropped land. To achieve this, positive economic and fiscal measures should be introduced to encourage farmers throughout the country to retain these wildlife habitats and to manage them for wildlife. The details of the proposals are complex and fit the special organisational



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Fig. 4: Agricultural land in Great Britain



and sociological factors which appertain to Britain. It is recognised that there is no one solution to the problem. The mixture of measures required include:

- increasing the number of nature reserves in the lowlands;
- improving consultative drills between the farming community, its agricultural advisers, planners and conservation advisers, especially as regards the conservation of Sites of Special Scientific Interest (SSSIs). (The Nature Conservancy Council has a statutory duty to schedule these places. They cover over 5% of the country and include nearly all the more important biological and geological features in Britain which are not managed as National Nature Reserves.)
- providing realistic financial incentives to farmers to conserve and manage wildlife habitats, especially SSSIs, for conservation; and most importantly by
- developing a national land use strategy which should state explicitly that conservation of nature and landscape are national objectives along with those of food and timber production. Such a strategy would enable all the different government departments and agencies to encourage the farmer to use his land to the best advantage of the nation. It would protect the best farmland for farming and the best wildlife habitats for conservation. For the first time farmers would be encouraged by official policy and incentives to take the view that there is much more to farming than producing food profitably. There is much evidence to show that many farmers believe this already, but it is clear

that they need the country's backing if they are to make significant contributions to conservation in the future.

Conclusion

Each country has its own particular conservation problems but the situation in Britain is certainly not unique: political boundaries have no biological significance and agriculture is being modernised throughout Europe. Once the nature of the common problem is understood there is great scope for different countries to help each other.

Nature conservation has been a popular concept in Britain for many years, yet we have learned that goodwill and constructive dialogue between farmer and conservationist, while being essential, are not enough on their own. Something more is required if the wish to conserve nature is to be translated into effective action on the ground. This is because the farmer's activities are largely determined by economic and fiscal pressures. Until these can be modified to promote both agriculture and conservation we shall be powerless to arrest the insidious deterioration of wildlife resources which is occurring throughout Europe.

N. M.



Slowing down can often save a life: yours as well (Photo ADAC)

Death on the roads

Heinrich Wolf

The first article in a series of two on the losses of game and other wild fauna – caused by traffic, electric high tension wires, agriculture, canals, etc.

Two major factors have combined to create the present environmental situation. The population explosion, under way since the middle of the last century, has increased the demand for space, food and natural resources. It has been accompanied by the headlong technological development of the last fifty to sixty years, culminating in automation. Man makes continuous inroads into the natural environment of plants and animals in order to satisfy his needs. The habitat of wild plants and animals has been increasingly en-

croached upon, modified or destroyed. Their life supports have been undermined, with the result that their numbers are constantly diminishing. This is a process which will gradually lead to the extinction of individual species.

This paper deals with losses of game caused by road traffic and traffic accidents caused by game in the Federal Republic of Germany. Relevant basic studies were carried out by Dr Erhard Ueckermann, Head of the *Forschungsstelle für Jagdkunde und Wildschadenverhütung* of North Rhine-Westphalia, D 5300 Bonn-Beuel, Forsthaus Hardt, whom I should like to thank for sending me an offprint of his work from which he has kindly allowed me to take the figures appearing in this article.

Losses of game caused by road traffic

Almost of all species of game are threatened by road traffic. However, loss figures are available only for certain species. The type of road is an important factor, with the highest losses being recorded on roads with heavy, fast-moving traffic. It is also interesting to note the relation between game density and loss figures: the denser the game population, the more animals are run over.

The following are the annual loss figures for five species of game on the territory of the Federal Republic of Germany:¹

The loss figures show that individual species react differently to road traffic. The

highest losses are sustained by two hoofed species, roe-deer and fallow deer, which are also the ones most dangerous to road traffic.

Enquiries into when the highest losses occur have shown that red deer, fallow deer and wild boar are most susceptible in the rutting season. The highest losses of roe-deer occur in March and November. Road traffic claims the greatest number of hares in February and March. The reason would seem to be that this is the mating period for hares and also the time when the first litter of young hares leaves the warren. As regards the time of day, losses for all the animals studied are higher in the evening than in the morning. The highest roe-deer losses occur from 6 to 8 a.m. and from 6 to 10 p.m. Red deer losses are highest between 7 p.m. and 2 a.m., and the peak for wild boar is reached between 7 p.m. and midnight. This confirms the nocturnal activity of these two hoofed species. High losses are recorded for fallow deer during the day as well — approximately the same as those of the morning hours. It is noteworthy that the victims are generally males.

Traffic accidents caused by wild animals

In the course of a year there are more than 250 000 collisions in Germany between cars and wild animals, making a daily average of at least 685. Fortunately however, running over a wild animal does not always result in a traffic accident. The

schadenverhütung, to about 40 deaths, 2000 injuries and DM 50 million in material damage.

Most accidents involving wild animals occur on Sunday, followed by Saturday, Friday and Monday. This reveals a close connection with heavy weekend motor traffic. Accidents involving wild animals are particularly frequent after new stretches of road are opened up through extensive wooded areas. Animals at first keep to the same routes as they require a certain amount of time to adapt to new circumstances. A lot therefore depends on motorists reducing their speed and driving more carefully if collisions with wild animals are to be avoided.

Game-linked accident prevention measures

In the last twenty years considerable efforts have been made to check road accidents involving wild animals. A number of experiments have been carried out with more or less positive results. Today we have optical and acoustical preventive apparatus, sensing devices, warning signs, speed limits, fences and other isolating techniques, together with arrangements for 6 reeding-grounds and cover. Finally the importance of educating the driving public should not be underestimated. In the present paper I shall confine myself to discussing those preventive measures which have proved most effective.

Speed limits are always effective if carefully observed by drivers. However, it must be possible to enforce a strict speed limit under circumstances. It is a known fact that wherever bad road conditions or sharp curves make it necessary to drive very slowly, practically no traffic accidents are due to animals.

Game protection fences have proven highly effective. They are used to line both sides of roads carrying heavy traffic, especially federal motorways and highways. Obviously such fences are only erected along stretches of road where there is considerable danger of accidents caused by animals (about 10% of the national road network). In order to avoid spoiling the scenery unnecessarily, unobtrusive types of fence are used. Those with knotted or quadrangular interstices are particularly suitable as they produce a smooth fence flow. Fences should be 1.90 metres high for red deer, fallow deer, sikas and mufflons, while for roe-deer and wild boar 1.50 metres are required. Game protection fences should not end at the edge of the forest but carry on for at least another 100 metres in order to prevent animals from crossing the roads at the end of a wooded area or moving into the space between the fences. Where one road crossed another with a game protection fence the gap requires special safeguards. The installation

Species		Annual loss figure (approximate)
English name	Scientific name	
Roe-deer	<i>Capreolus capreolus</i> (L., 1758)	44 000 head
Red deer	<i>Cervus elaphus</i> (L., 1758)	600 head
Fallow deer	<i>Dama dama</i> (L., 1758)	680 head
Wild boar	<i>Sus scrofa</i> (L., 1758)	540 head
Hares	<i>Lepus europaeus</i> (Pall., 1778)	122 000 head

following breakdown gives the percentage of traffic accidents in relation to the number of animals run over.

Roe-deer	17.4%
Red deer	43.4%
Wild boar	26.5%
Hares	1.3%

Traffic accident causes by wild animals give rise annually, according to figures from the Federal Statistics Office and the *Forschungsstelle für Jagdkunde und Wild-*

¹ The figures collected for the Federal Republic of Germany are intended as an example; they may also apply in other central European countries. The German experience could be of assistance to them when devising their own preventive measures.



It is often possible to avoid accidents like drowning — construction on canal banks in The Netherlands permitting game to mount the steep inclines

Death on the roads

of gratings, with a breadth of 3 to 4 metres, which continue the game protection fence across the intersecting road, have proved effective in such cases.

Among other useful protective measures are the *clearing of roadsides* and the *siting of feeding-grounds* as part of forestry and hunting activities. Finally, *drivers' behaviour* is of great importance in combating traffic deaths involving game. This led the *Schutzgemeinschaft Deutsches Wild e. V.* some years ago to issue a leaflet for drivers drawing attention to the danger of traffic accidents involving game and giving advice as to proper behaviour on roads where game can constitute a danger. Here is an extract:

"Remember that a collision with a wild animal may endanger your own life; heavy material damage will almost always be caused. Remember too, the serious losses such accidents inflict on nature, already beset from many other quarters. Try also to avoid hitting small animals; even the hedgehog enlivens the landscape for our pleasures and has his place in the economy of nature.

Following this advice is in your own interest:

1. If you are travelling through a wooded area, remember to 'Think of yourself and be mindful of animal life'. Bear in mind that motor accidents involving game often occur only because the driver fails to exercise the necessary care. Be alert when travelling along forest roads, reduce speed because of the possibility of wandering animals and the danger of collision.

2. Signs warning of game crossings are placed on particularly dangerous stretches of road. If in addition a distance such as for '2 000 metres' is mentioned, this indicates, that starting from the warning sign, increased caution should be exercised for the next 2 000 metres. Here, too, ease off on the accelerator, and drive carefully. Dip headlights immediately at the approach of another vehicle.

3. If animals appear at the edge of the road or on it, be warned! Usually not just one but several animals will cross, and often turn back again immediately.

4. Game which has been hit or run over should be reported at the next police or forestry station, or at the next highway maintenance depot.

5. Should an animal which has been hit nevertheless disappear in the woods, mark the spot of the accident and inform one of the services mentioned under paragraph 4. Licensed hunters will conduct a search with dogs.

6. Sick or wounded animals which lie down within sight of the roadway should be left alone; they should not be approached or frightened.

7. Game which has been run over must not be taken home but turned over to the nearest police or forestry station, or highway maintenance depot. Actions to the contrary constitute poaching, an offence punishable by imprisonment.

The deliberate running over of game is a crime and can endanger traffic. The conscientious driver will refrain from such acts." H. W.

Ecology courses

Jean-Pierre Ribaut

The riparian forest contributes to the quality of water, prevents erosion and establishes valuable natural biotopes — The Töss near Winterthur, Switzerland (Photo Institut fédéral de recherche forestière, IFRF)



The main aim of the Council of Europe's work is, through the constructive assistance of experts backed by the Secretariat, to draw up conventions, resolutions embodying recommendations to member governments and other legal instruments, such as agreements, charters, etc. A further aim is, quite simply, to organise exchanges of views. In environment, as in several other sectors, another important facet is the studies undertaken to provide basic surveys of questions of current interest, setting out conclusions directly applicable by all concerned. Two studies that come into this category:

— Aspects of soil conservation in different climatic and pedological regions in Europe, by Dr F. Fournier;

— Impact of recreation on the ecology of natural landscapes, by Dr J. E. Satchell.

A government initiative

Following European Conservation Year in 1970, the European Committee for the Conservation of Nature and Natural Resources encouraged the organisation of training and refresher courses aimed at officials in charge of the management of the natural environment as well as persons

responsible for planning decisions. As its own resources were very limited governments were left to take the initiative of organising such seminars and, in 1973, the United Kingdom arranged the first in a series of applied ecology courses.

So far four courses have taken place:

— Monks Wood (United Kingdom) 7–13 May 1973;

— La Marsiliana (Italy) 16–22 September 1974;

— Innsbruck (Austria) 6–11 October 1975;

— Marly-le-Roi (France) 12–18 September 1976.

The fifth course is to be held in Switzerland on 3–7 October 1977. By way of illustration, this article describes the form it is to take.

A special theme for each session

Each course is focused on a relatively limited theme so that discussion in depth will be possible. This theme may relate to the special ecological problems of a specific region. For instance, the La Marsiliana and Innsbruck courses dealt respectively with:

— planning of the biological environment in the Mediterranean region, and

— use and protection of mountain regions.

The other two courses concerned subjects of general, yet at the same time specific, interest:

— land use, at Monk's Wood, and

— planning, conservation and management of wetlands, at Marly-le-Roi.

Participants are chosen in the light of the themes to be discussed but in the main are persons engaged in field work. As a rule no more than fifty participants are invited so as to facilitate discussion.

As mentioned above, governments are responsible for taking the initiative of organising these courses. They are in charge of the entire administrative and practical side while the Council of Europe allocates a lump sum subsidy to the organisers.

The course programme and choice of lecturers are decided jointly by the organisers and the Council of Europe. Particular care must be taken to balance lectures, discussions and field studies. The latter are an essential component of any training and educational activity and should occupy at least a third — or, better still, half — of the total timetable. In this connection mention should be made of the French organisers' original idea in arranging a flight over the Somme Bay to give participants a true overall picture of the environment under study.

Encouraging results . . .

How successful can these first four courses be said to have been?

The results have been singularly positive and encouraging. The participants learn from the expertise of the most highly qualified specialists and, by comparing their personal experiences and assessing schemes in the field, teachers and students benefit alike.

On their return to their respective countries, the intention is that participants should act as mouthpieces, passing on what they have learned to the persons they work with.

Obviously it will be far easier to disseminate information if the working papers produced by the course are published. The Italian authorities, more specifically the Directorate General for the administration of mountains and forests, should be congratulated on publishing a 500 page bilingual volume containing all talks given at the La Marsiliana course.

The Austrian National Agency of the European Information Centre for Nature Conservation also published a special issue of its information bulletin devoted exclusively to the Innsbruck course.

Such initiatives are, needless to say, much to be encouraged and are an effective means of giving widespread circulation to the theories and ideas expounded at these courses. They also give publicity to the conclusions adopted at the close of each course, which usually embody several recommendations to the Council of Europe. These recommendations are the product of exchanges of views among the participants and represent practical proposals submitted to the European Committee and

the Committee of Ministers for approval. They are an important factor in the organisation's future work programme. Some recommendations may be more limited and be addressed to other organisations or the government of the host country, as was the case at the most recent course, in 1976, when the conclusions urged the French Government to step up basic surveys in a number of areas visited with a view to improving management.

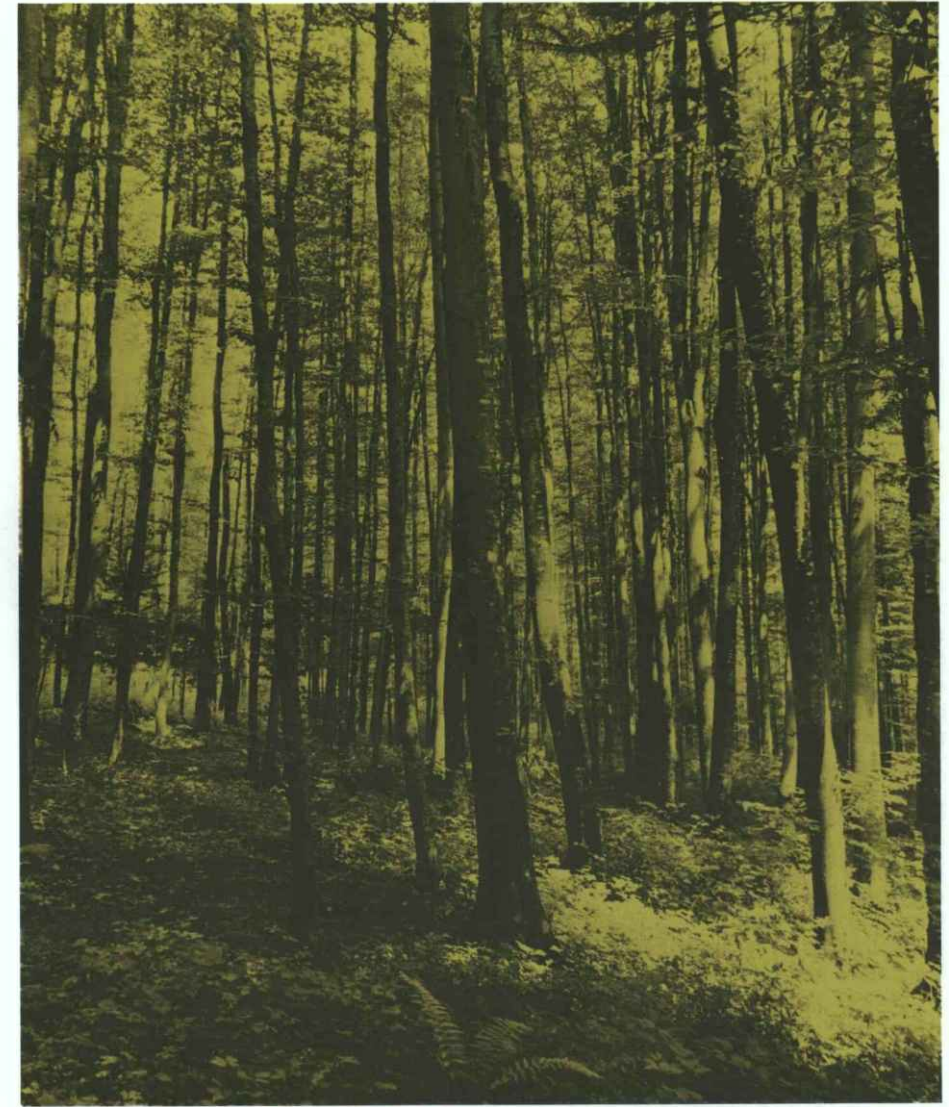
. . . and co-ordinated activities

Often the general theme of the course is determined according to the particular stage reached in the European Committee's work. For instance, the Austrian course on problems of mountain regions was held at the time when the "Ecological Charter of Mountain Regions" was being drafted. The 1976 course was connected with the wetlands information campaign. This synchronisation makes it possible for the course to draw on past or present work or studies by various of the European Committee's specialised bodies and on the assistance of its experts. Conversely, Council of Europe activities in progress draw advantage of the contributions of lecturers and other participants in the course.

Admittedly, a number of improvements could still be made to achieve greater effectiveness since, on occasions, programmes are too full and intensive and exchanges of views have to take second place.

Nonetheless, this tradition has proved most valuable, as is borne out by the interest shown by member governments.

J. P. R.



The deciduous forests of Europe are often less productive than plantations but they are necessary for ecological balance and the character of the landscape (Photo IFRF)



An example of natural forest: future nature reserve in the canton of Obwalden, Switzerland (Photo E. Kessler)

The European forest

R. Lebeau

The Fifth Applied Ecology Course, to be held in Zurich on 3–7 October, is to form part of the Swiss contribution to conservation of the natural environment in Europe and the theme to be discussed: "The forest and landscape protection" is one that has been relevant in Switzerland for many years.

In the course of the talks and discussions envisaged, and visits to specific projects, mainly in the central and northern parts of Switzerland, the participants will look into the interrelationships between the forest economy and ecological management of the environment in the broad sense.

The forest and its functions

The traditional activities of a forest economy, like those of an agricultural economy, determine management of the environment to a great extent and play a major role in its protection.

The value and special interest of the course will lie in the discussions sparked off by critical comparisons of the various forms of activities viewed in relation to environment conservation.

Particular attention will be given to the various functions fulfilled by forests: pro-

Ecology courses

The European forest

tection against damage by natural forces, water supplies, production of consumer goods, preservation of the biological balance of the landscape, recreation and tourist role, protection against the inroads of civilisation and, last but not least, a refuge for many species of fauna and flora. A long-term forest policy has been worked out by the Swiss cantonal and federal authorities whose intention is to use forest resources to the full, making no distinction between production, protection and recreation: the community must be able to draw every advantage from all these resources.

Landscape protection

Here four major functions are at issue: nature conservation, protection of the cultural and man-made heritage, landscape protection for recreation purposes and landscape planning in keeping with ethi-

cal, ecological, social, cultural, political and economic considerations.

The aim is to protect natural, cultural and landscape assets without space or economic restrictions.

Comparative aspects

The problems involved must be studied by weighing the various factors at stake against each other. Attention should therefore be focused on the subjects listed below:

Forest management:

- preservation of the ecological balance;
- changes to this balance through the introduction of a new and artificially maintained balance;

Preservation of forest areas for specific purposes:

- setting up of reserves for scientific research;
- support of typical traditional activities;

Preservation of deciduous forest in medium-altitude regions:

- problem of excess resin production in broadleaved forests;
- changes in the forest biotope;
- introduction of exotic and other species in a station;

Assistance in the conservation of certain tree formations:

- protection of wetland or waterside forests;

- protection of sites with relict forest formations (pine forests, marshland forests);

- preservation of quick-set hedges, thickets and isolated trees;

Contribution to landscape protection in connection with:

- the planing of forestry installation schemes;

- the issue of felling permits;

- subsidies for projects, installations, etc., especially in connection with land consolidation, road building and correction of river courses;

Conservation of natural aspects of the landscape:

- problem of clearing large stretches of forest, especially in vulnerable or conspicuous areas;

- changes to give the landscape a more geometric appearance by straightening forest edges;

Development of forest for recreational and educational purposes.

It is our hope that this Fifth European Applied Ecology Course will, on the one hand, give further encouragement to participants' efforts to protect the landscape in their countries and, on the other, contribute to preparations for the Third European Ministerial Conference on the Environment, to be held in Switzerland in 1979, at which environment conservation concepts will be compared with those of agriculture and forestry, the sectors that most exploit the rural environment. R. L.

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