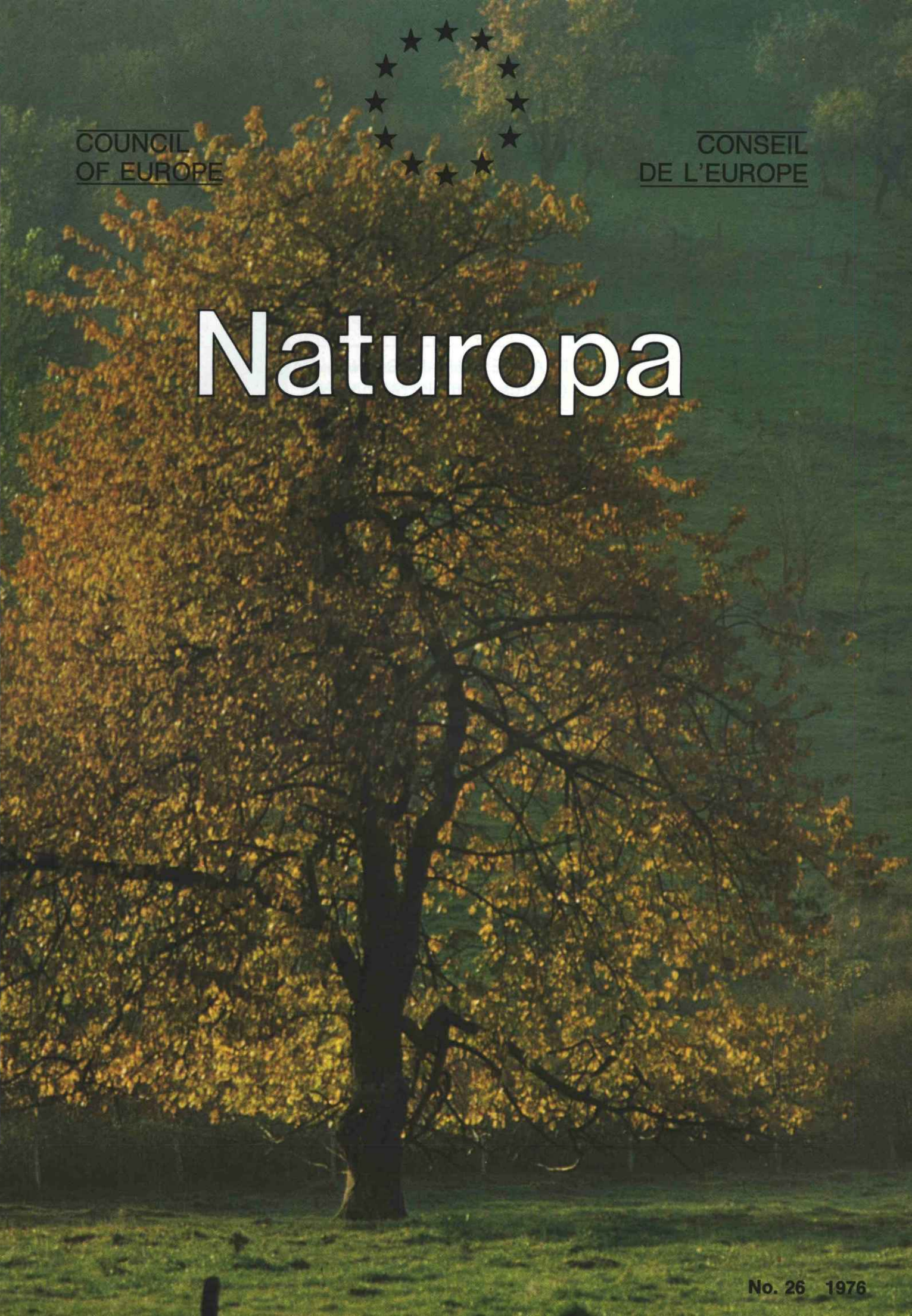

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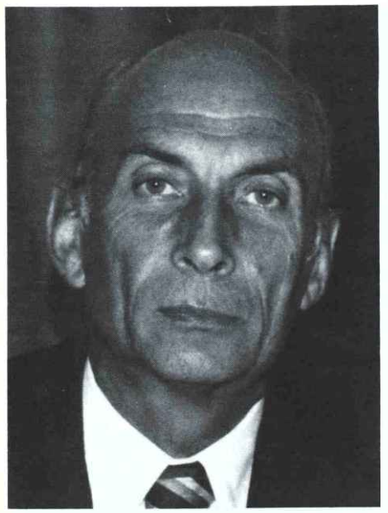
EDITORIAL



Professor W. ENGELHARDT
Deutscher Naturschutzring
Bundesverband für Umweltschutz

Since 1 August of this year, the German Association for Nature Protection, a registered federal body for environmental protection, has been acting as the national Council of Europe Agency. The German Association for Nature Protection is an "umbrella" organisation, that is to say, an organisation of which only associations, but not individuals can become members. At present it has ninety associations with a total of 3.1 million individual members, which include, in addition to regular nature protection organisations, German hiking and mountaineering associations, the German Society for the Protection of Game, the German Anglers' Association, the German Equestrian Club and many natural science associations. These bodies have of course their own special interests, but they are all agreed on the need to keep the natural environment as intact as possible and to take account of what is now known about ecology when shaping the environment. They know that the preservation of a viable natural environment is a basic prerequisite for their particular activities. Without clean water there can be no fish, and without a proper countryside there will be no game. All these specialised organisations shelter under the umbrella of the German Association for Nature Protection.

A few months ago this Association celebrated its 25th anniversary. A survey of that period showed that this umbrella organisation — only in the Netherlands is there a similar one — has indeed proved effective. Naturally there have been occasional differences of opinion on certain questions among the members of the Association, much as the members of any large family will at times hold different views on various problems of daily life. But so far we have always managed to channel these different points of view towards our common aim. In this way the German Association for Nature Protection has managed, over the past 25 years, to reach a consensus on about 98 % of all basic environmental problems without having to go through the tedious process of consulting each individual group.

Our Association always tries to put its case as objectively as possible. In this it has the co-operation of outstanding experts in the most varied branches of the relevant sciences as well as in practical matters. The harmonisation of different views on the problems of environmental protection should today be one of the chief maxims of politicians when they take decisions on the environment. Since European Nature Conservation Year in 1970, numerous new laws and regulations covering the various areas of nature conservation and environmental protection have been introduced in all the EEC countries and the relevant departments have been set up or enlarged. But these can still only deal with the basic features of environmental protection: preservation of natural ecosystems, keeping water and air clean, protecting the population from excessive noise and radioactivity, and removing or recycling waste.

We know, however, that there are many other public authorities whose daily activities mean that they frequently interfere with the natural environment : we need only think of the expansion of transport systems, fuel production, heavy and small industries, the spread of settled areas and modern agriculture. With the exception of a few areas of cultural life, almost all the activities of the State and the individual impinge on the natural environment. For this reason environmental protection can ultimately only be successful if these activities are viewed not merely from an individual, specific point of view, but also from the point of view of the possible harm they may do to the natural environment. That is why the principle of environmental tolerance testing was introduced by the Federal Republic of Germany at the first European Ministerial Conference on the Environment in Vienna, while at the Ministerial Conference held in Brussels this year, our country again emphasised the need to align economic development in the widest sense with the natural environment protection requirements. It is absolutely essential that testing for environmental tolerance should take place at the planning stage and should be taken into account at every stage of the process right down to the final decision.

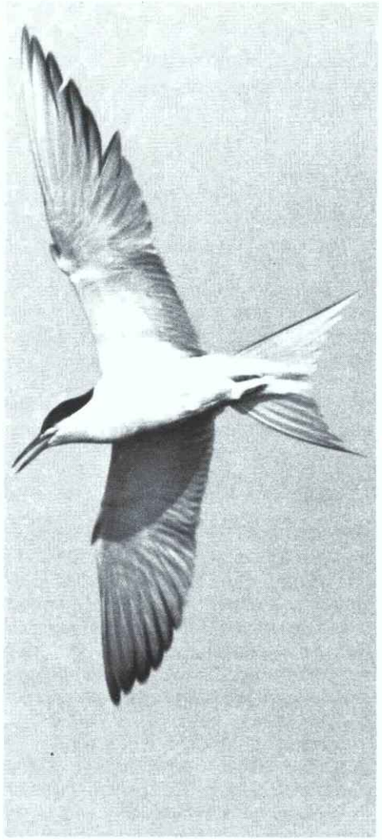
When speaking about problems of environmental protection, politicians often like to quote the maxim, in itself quite correct, that man must no longer insist on realising everything that is technically possible, particularly if this means inflicting great or lasting damage on the environment. These statements are, however, frequently no more than lip service on the part of our statesmen, and only too often it is not until after far-reaching decisions have been taken and huge investments made, that they are seen to cause serious harm.

I would like to give as an example the development of the magnetic railway in our country, a project in which huge sums were invested, but the realisation of which in the densely populated regions of the Federal Republic would, as is commonly known, mean intolerable and lasting environmental destruction.

Another example that shows the need for environmental tolerance testing at international level is the very topical problem of the destruction of the ozone layer of the atmosphere by exhaust gases from supersonic aircraft, and the massive use of sprays containing a fluorine-chlorine-hydrocarbon propellant.

The principle of environmental tolerance testing must not, however, be observed only when problems of this magnitude are involved, but also, and indeed particularly, in the daily decisions taken by municipalities and mayors and at the lowest administrative levels. It might be supposed that in view of the large number of laws relating to the environment and the constant setting up of appropriate public authorities, the need for private organisations for environmental protection had ceased to exist. This would be a fundamental and dangerous error, for it is precisely in the vast area of environmental protection that conclusive and lasting results can be ensured only by the active co-operation of the individual. Only environment-conscious people will treat the environment with due respect. Not even the most efficiently run police state would have enough policemen to prevent innumerable daily violations of the natural environment.

However, proper environmental behaviour presupposes up-to-date expert information. The German Association for Nature Protection has therefore set great store by public activities from the very start. At an early stage it scored a decisive success: it was at its instigation that the Standing Conference of the Ministers of culture of the Federal Länder decided on 12 December 1952 that nature conservation and preservation of the countryside should be included as a subject in all *the relevant courses in every type of school. In 1951, at Munich Technical University, I received the first nature protection teaching assignment in the Federal Republic. At the time attendance at such lectures was optional. Today there are Chairs in many Federal universities in nature conservation, preservation of the countryside, ecology and individual aspects of environmental protection; in many courses attendance at such lectures is now compulsory and the subjects have become examination subjects.*



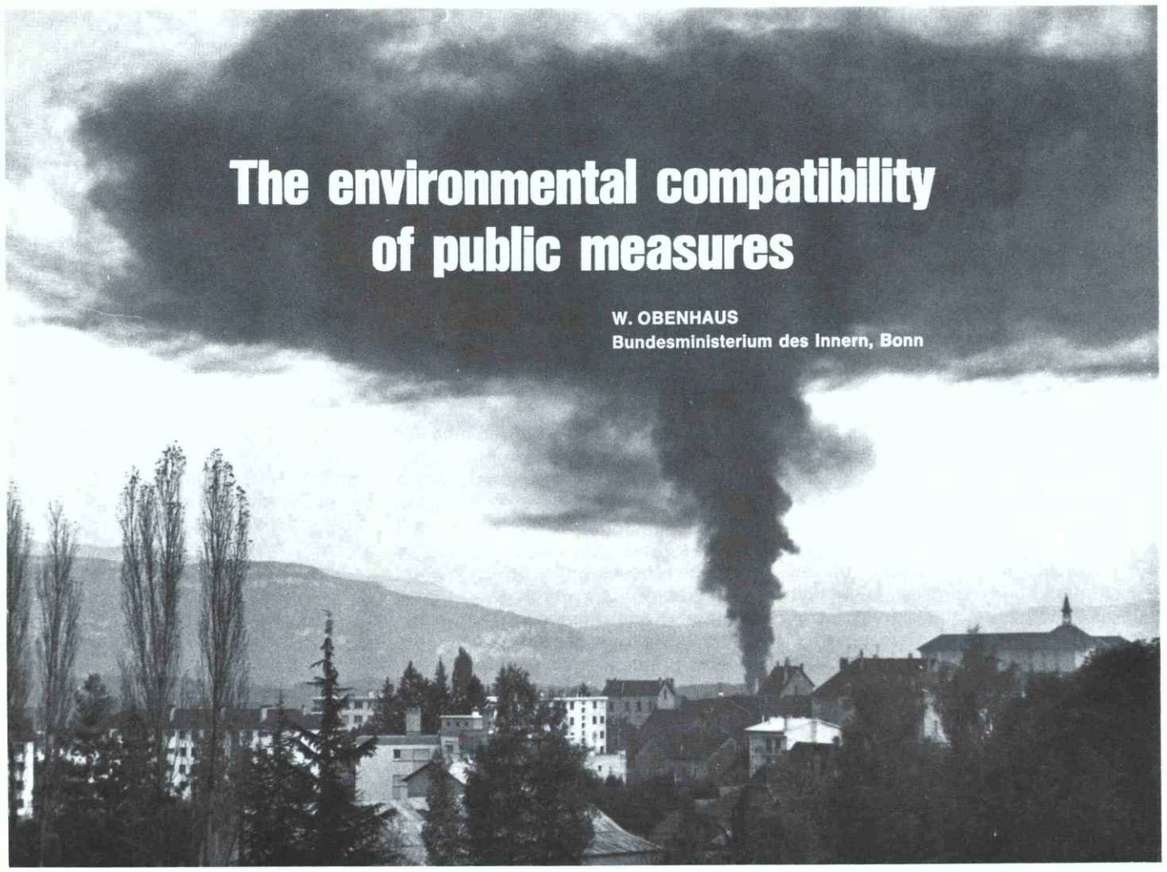
With considerable financial support from public bodies and more recently in particular from the Federal Ministry of Food, Agriculture and Forestry, the German Association for Nature Protection has brought out numerous leaflets, booklets and posters as well as documentary films on a massive scale. The titles of the following publications give some idea of the great diversity of environmental protection:

"Groundwater — tomorrow's shortage?
Today's demand: the farmer as the guardian of the environment.
Everyone can protect the sea-bed!
Better protection for our birds!
Game and nature protection
Wildlife reserves
Recycling raw materials
Wetlands not wastelands
Are you nature conscious? — Advice on environmental protection
Landscapes without a future
The gravel-pit story
The ABC of ecology
The ABC of wetlands (1976)
What can I do to protect nature, the countryside and the environment?"

International co-operation on environmental protection has recently made significant strides forward in the EEC and the Council of Europe has played no small part in this. In future, the links between private organisations for the protection of the environment in European countries need to be very considerably strengthened. This is also in line with the new policy of the International Union for the Conservation of Nature and Natural Resources which hopes in future to do more than has so far been done to solve outstanding problems of environmental protection at regional level, in co-operation with the individual states and organisations whose regions are affected.

The environmental compatibility of public measures

W. OBENHAUS
Bundesministerium des Innern, Bonn



1. Discussion of the theme "Procedures for the environmental compatibility of public measures" at the Second European Ministerial Conference on the Environment, held in Brussels on 23 and 24 March 1976

Meeting at a time of increasing conflict between the requirements of environmental protection in general and nature conservation in particular, and those of economic and social development, the Ministers taking part in the Second European Conference on the Environment dealt very thoroughly with the problems that arise in assessing the effects of development on nature. In Resolution No. 1, it is stated clearly:

- that the fundamental objectives of nature conservation and landscape planning must be defined as a basis for the assessment
- that effective machinery must be set up for implementing these measures, and that the co-operation of the authorities responsible for nature conservation is an essential feature of such machinery.

The Ministers then recommended that the following be included in the Work Programme of the Council of Europe:

- the exchange of information and experience on goals, legal aspects, procedures and methods for the examination and evaluation of the effects of public measures on the natural environment
- on that basis, the development of general principles for procedural patterns and methods for the assessment of the ecological impact of public measures.

Which problem areas might be emphasised in the future work of the competent bodies of the Council of Europe? To answer this question (see 4), it seems appropriate to start by summarising the basic problems that arise in any assessment of environmental compatibility (see 2 and 3).

2. Assessing the environmental compatibility of public measures: fundamental ideas and goals

As to the basic reasons for making an effective assessment of the environmental compatibility of public measures, and the results that such an assessment should achieve, there was a considerable measure of all kinds, including legislation, programmes, plan and the legal conditions under which licences are granted to individuals for private activities.

3. Practical problems

If an effective instrument is found whereby this goal can be attained, four central questions must be investigated:

a) Is a legally founded, *binding injunction to assess environmental effects* necessary in the preparation of decisions which are not primarily concerned with environmental matters? (see 3.1)

b) What *requirements* must an *assessment procedure* satisfy? (see 3.2)

c) What *methods* are appropriate for carrying out the assessment? (see 3.3)

d) What *criteria for judgment and assessment* are required? (see 3.4)

Anyone looking into the problems of assessing environmental compatibility would be well advised to examine the "Environmental Impact Statement" (EIS) implemented by the United States Federal authorities by incorporation in a legal instrument (National Environmental Policy Act — NEPA — in force since 1 January 1970), and to make comparisons, bearing in mind that the constitutional and administrative structures are not the same in the USA as in Europe. When considering the four central questions, both EIS and NEPA should therefore be taken into account as far as possible.

3.1 Binding injunction to assess environmental effects

There can be no effective assessment of the environmental effects of measures not primarily designed to serve environmental ends, unless there is a legally binding injunction to that effect. From the standpoint of jurisprudence, there are two possible solutions:

a) a special regulation incorporating the injunction that environmental effects shall be taken into account where public measures generally are concerned (as with NEPA),

or

b) incorporation of this injunction in existing or future legislation for the various sectors of administrative law (standard practice in European administrative law).

NEPA makes it compulsory for all federal authorities in the United States, when preparing their decisions, to take due account of environmental effects in addition to economic and social considerations. One of the reasons for this sweeping regulation was the need to avoid in future isolated decisions being taken by independent authorities, which are not bound by instructions of the Executive Office of the President or of ministries, and have collegiate leadership and narrow legally-defined functions. Comparable administrative structures are alien to European constitutional systems; in Europe, there is always a strongly hierarchical administrative structure in which disputes between various authorities are settled in the last resort by the Cabinet.

For the Federal Republic of Germany, the Council of Environmental Experts ("Rat von Sachverständigen für Umweltfragen"), an advisory committee independent of the Federal Government, recommended in its first environment report (1973) that a comprehensive act be issued along the lines of NEPA. After careful consideration, the Federal Government did not act upon this proposal because legal principles and administrative procedures already exist in a series of sundry laws and in regional planning legislation, based on the traditional principles concerning prevention of danger and consideration for the overall welfare; and these principles and procedures can be regarded as piecemeal expressions of the injunction to assess environmental effects — even if some of them could do with being improved and augmented. For that reason, the Federal Government simply adopted a Cabinet resolution on "Principles for examining the environmental compatibility of public measures", which is additional to the existing acts and Federal Ministry procedural rules and provides that all public measures must be checked for environmental compatibility. The resolution is also relevant to the method of this investigation, since it incorporates some general principles for carrying it out.

In other European countries, too, the starting situation is similar to that in the Federal Republic; they also have piecemeal regulations which already have the basic characteristics of an injunction to assess environmental compatibility.

The question that then arises is whether it would not be sensible, as an alternative to NEPA, to extend the piecemeal regulations in such a way as to constitute an adequate, problem-oriented legal system for the assessment of environmental compatibility.

Taking this idea a stage further, we find, especially where the protection of man's natural environment is concerned, that there is a need to design legislation on nature conservation and landscape protection so as to make it an effective instrument for testing the environmental compatibility of all public measures that have an effect on the natural environment. Particular attention should be paid to this aspect of modern nature conservation legislation (especially in the framework of the Council of Europe).

3.2 Procedural matters

Where investigation procedures are concerned, there are two basic models that can be followed. These are:

a) the experimental results (of the assessment) to be incorporated in the decision-making process may be documented in a separate environmental impact statement (as in the case of NEPA)

b) an empirical investigation may be made as an integral part of the decision-making process (as stipulated, for example, in the principles for the authorities in the Federal Republic, mentioned earlier).

The procedure based on NEPA consists of the following stages:

a) During the preparatory stages before a decision is made, the draft environmental impact statement is prepared by a specially appointed official of the authority (one such official must be appointed by each authority)

b) The draft is brought to the notice of all authorities affected by the decision, and the general public, who may make recommendations within a specified time-limit

c) After this consultation, a final statement is prepared and brought to the notice of the parties concerned in stage (b), and the Council on Environmental Quality (CEQ), created in the Executive Office of the President. The proposed action may begin only after expiry of a specified period during which the CEQ can examine the report and make recommendations.

The statement is not an independent act of administration that may be challenged before the courts; even so, when the proposed action is subjected to a judicial investigation, confined to questions of law, any shortcomings or legal imperfections of a statement of this kind may be denounced as a violation of the law.

The principles adopted by the Federal German Cabinet with regard to the assessment of the environmental compatibility of public measures simply lay down that the competent authorities must, as early as possible during the preparatory stages, ascertain whether such measures have adverse effects on the environment, and consider any remedies or alternatives that may help to avoid, offset or diminish these effects. This examination must take account of any general rules on participation (act or rules of procedure) that may be applicable.

The two basic models have the following features in common:

— environmental effects must be assessed during the preparatory stages before the decision is taken, and practical specifications are given as to how the assessment is to be carried out

— the authorities likely to be affected by the decision must be involved in the assessment.

This seems to me to be the inalienable nucleus of any effective assessment procedure.

Whether one of these basic models should be given precedence over the other is a question that cannot be answered in general terms. It is inseparable from the fundamental structures of the particular constitutional and administrative system of the country in question, and also from its legal system. For an international exchange of information and experience, the reasonable course would be to hold only a limited discussion on the requirements that an effective procedure for examining environmental compatibility must satisfy.

A special document on the result of the assessment may well be useful. A further question of special interest is that of the role of such a document in court procedures. Under German law, the courts are required to conduct a complete review of the facts, and this review can not be dependent on any document of this kind. Certainly, where public involvement is concerned, such a report is of particular significance, since the public cannot be properly informed and consulted in any other way. However, it will not be possible to regard public involvement as an essential element in an examination of environmental compatibility that an authority is required to carry out. This is not so much a problem of examining environmenal effects as a general problem of official administrative procedure. Even so, improved participation by citizens in the assessment of environmental compatibility would be particularly useful, and contribute to a betterment of this procedure. It is from this angle that the question of citizen participation in national affairs should be further considered.

3.3 Method

Because the complex and complicated correlations of environmental effects are so difficult to disentangle, and the best remedial measures and alternatives so hard to find, a methodical and systematic approach to environmental problems is required. For this, a judicious combination of two aspects would seem to be important:

a) General logical considerations as to the design of a systematic decision-making process, and

b) Appropriate integration of environmental effects in this systematic decision-making process.

The first aspect may involve a three-phase operation:

a) determination of objectives (discernment, establishment and examination of objectives)

b) preparation for action (instrumental planning)
   — What marginal conditions and interrelationships exist?
   — What solutions (alternatives) are offered?
   — What is the best solution?

c) execution.

The assessment of environmental compatibility is to be incorporated as one of the main correlation analyses of phase (b), although there may be feedback to phase (a). In considering the environmental aspects, in the course of this operation, four central questions arise in connection with the analysis of the chain of ecological effects:

a) What (positive and negative) impact does the proposed public measure have on the environment?

b) How are the effects to be evaluated? (see 3.4)

c) What remedies and alternatives are available?

d) What higher considerations are necessary for resolving any outstanding conflict situations (conflict of aims)?

For consideration of details, it might be possible to prepare check lists.

An international exchange of information and experience would seem to be particularly helpful, as a means of resolving questions of method.

In particular, an assessment should be made of the results achieved in the United States with the Environmental Impact Statement established in accordance with NEPA, together with the additional instructions for implementation and the CEQ directives. An impact statement established on that basis would comprise the following items:

a) Description of the proposed measure and its purpose, and also of the affected area

b) Relations to land-use plans

c) Possible good and bad effects on the environment

d) Alternatives to the proposed action

e) Any unavoidable adverse environmental effects

f) Comparison between short-term local advantages and long-term environmental consequences

g) Irretrievable losses of natural resources.

This formal procedure is confined to major actions which have a significant influence on the environment, and in no way diminishes the obligation to take account of environmental effects for all public measures.

3.4 Criteria for judgement and assessment

However good the method of investigation, it can achieve the desired result only if practical criteria for judgment and assessment are available. In many cases, however, such criteria are lacking. Further work in this field is therefore a matter of urgency.

An attempt must be made to develop a master plan (or system of goals), subject to continual reappraisal, for the review of environmental effects. This master plan must satisfy three criteria:

a) The aim is to protect life, health, human well-being, the natural life-supporting elements and the man-made environment

b) These are damaged by certain human activities and through improper interference with the ecological order

c) Remedies to be investigated include: sparing use of natural resources, avoidance of (protection against) unnecessary and dangerous interference, elimination of adverse effects that have already occurred and farsighted preventive planning (preventive care).

For this problem area, too, an international exchange of information and experience would seem to be very helpful.

4. Considerations concerning future Council of Europe activities

4.1 In view of the complicated and complex problems involved in assessing environmental compatibility and the fact that discussions on the practical demands that this examination must satisfy are still to a large extent highly abstract, it would be particularly appropriate if the competent working parties of the Council of Europe were to give priority to selected problems in connection with the four central questions, with reference to concrete cases (pilot

examples), and to evaluate the results of their work in as generalised a way as possible (for example, in the form of a handbook). Here too, it will be in accordance with the well-tried tradition of the Council of Europe to give attention as a matter of priority to the "natural environment" aspect of conservation and to the corresponding area of lay, namely "nature conservation and landscape protection".

4.2 The first two questions (see 3.1 and 3.2) can be combined into a single theme complex: Can nature conservation law be so designed as to constitute also the legal foundation for an effective assessment of environmental compatibility for the "natural environment" area? What minimum demands must be met for this?

In connection with questions 3 (see 3.3) it would be useful to discuss in detail what methodical aids are best suited to integrating the effects on the natural environment appropriately in the decision-making processes of the public authorities.

In connection with question 4 (see 3.4), the establishment of a differentiated system of aims for the protection of the natural environment should constitute a very important basic step in the development of criteria for the assessment of environmental effects.

The Mediterranean maquis

Ruggero TOMASELLI,
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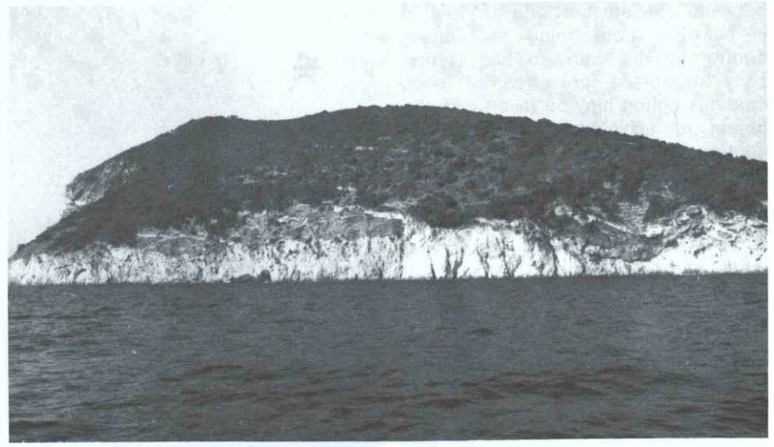
The maquis is generally a very dense cover of xerophilous, sclerophyllous evergreen shrubs. This kind of vegetation can be found in all environments with a Mediterranean climate. This is characterised by the alternation of a rainy season during the cold months and a dry season in the hotter months; it prevails around the shores of the Mediterranean basin and along the coasts of California, Chile, the southern part of South Africa and southern Australia.

Because its geographical distribution is so vast, the vegetation of the maquis varies greatly from place to place. Only in a few special and limited cases does it show a tendency to evolve towards more complex plant formations: almost always it originates from the deterioration of tree formations, that is of evergreen sclerophyllous forests constituting the climax, that is to say the ultimate state of balance between vegetation, climate and soil.

There are many causes for such deterioration: among the most important are tree felling, pasturing and fire. The forests have been felled almost from earliest times, either to use the timber itself in various ways, or to transform it into charcoal, or simply to make room for cultivation of pasturage; the process continues today in order to clear the land for building houses (second homes) or for tourist purposes. In the regions around the Mediterranean basin permanent nomadic pasturing has always caused destruction of the maquis; continual pasturing for thousands of years over the same areas has resulted inter alia in the reduction of both in quantity and distribution of many good forage plants (graminaceae and leguminosae), the place of which has gradually been taken by other less appetising species of a type usually found among ruins. The worst destroyers of the maquis have always been goats, which, since they have very hard palates and tongues and very strong teeth, can tackle tough leaves and even thorny branches. Fires, now as in the past, have always seriously affected the Mediterranean maquis, causing tremendous damage to both quantity and quality. In the past burning was the simplest and quickest way of destroying the maquis and creating new space for pasturage and crops. Nor it is less used for that purpose, but it is still one of the most important adverse factors, since in summer the dry environment combined with wind, particularly along the coasts, causes the fire to spread easily, and control is always difficult because of the scarcity of water. It is rarely that fire is due to natural causes such as lightning; usually it is the work of man, either indirectly (e.g. the "lens" effect of the bottoms of old bottles which have been thrown away) or directly, through the negligence of passers-by who throw away cigarette stubs or light small bonfires for their own amusement or for cooking, and then leave the embers at the mercy of the wind. There are also frequent cases of fires in the maquis owing to the burning of stubble in the fields and along ditches; this is a practice which is unfortunately continually resorted to by country folk and sometimes by roadmen. In addition to these kinds of unintentional but culpable fires, in some areas there is an increasing number of cases of deliberate incendiarism, as often as not in tourist areas, the object being to destroy the vegetation and thus temporarily depreciate a biotope by taking away its main interest, and then to exploit it by building and other works which otherwise would not have been permitted. If fires are not employed and controlled by specialist, the harm done is not confined simply to the vegetation but extends to animal life and very often to persons and property.

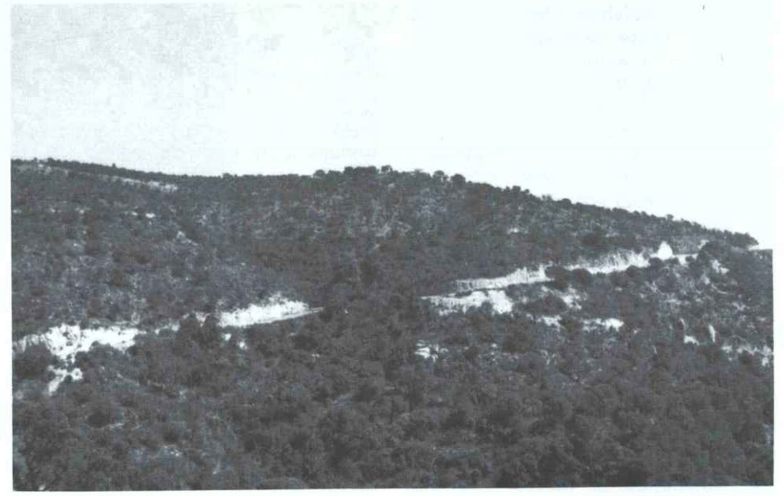
In the maquis, fires not only damage and destroy the wooded growth, but have a very severe effect on the whole area: tree stumps, seeds, undergrowth, humus, and the microflora and microfauna of the upper layers of the soil. In the driest areas, the disappearance of maquis as a result of uncontrolled fires is usually complete, so that the soil is suddenly left uncovered and therefore unprotected from the winter rains, which in the Mediterranean area are usually torrential and therefore cause great erosion. To the harm caused by the destruction of the plant cover we must therefore add consequential damage in the form of accentuated erosion and general hydrogeological imbalance.

The ecological value of the maquis resides in the fact that since it is formed by species with a relatively small leaf area, which has the effect of reducing transpiration, it is particularly adapted for survival in the severe Mediterranean climate; this survival is also favoured by the varying biological forms of its components, which combine together in such a way that the roots are distributed at different levels in the rhizosphere, in exactly the same way as their aerial parts. The small trees and higher shrubs, for example, in many cases live on water reserves which accumulate during the short winter rains in the lower layers of the soil, and do not compete with other components of the plant cover. The length and development of the roots of certain species helps with the progressive aeration of the soil to a considerable depth, thus facilitating the circulation of water; for this reason, the mechanical removal of tree stumps with part of the roots and the consequent disturbance of the soil seriously harms its profile. The maquis provides insulation against sudden changes of temperature and reduces the cooling effect of moving air, as well as protecting the soil from direct heat by its dense cover. In the maquis, in fact, there is a temperate and humid microclimate which limits ecotranspiration, and particularly during the dry summer period, promotes the preservation and development of nurslings of arborescent species; the maquis therefore has considerable importance in preparing the development of the forest and the requisite soil, and since it is a structuraly complex whole consisting of several strata (i.e. small trees, tall shrubs, dwarf shrubs, grass and micro-organisms in the state of mutual dynamic equilibrium) any thinning of its upper layers will immediately affect the microclimate and bring about changes of various kinds in the lower layers. Destruction of the smaller shrubs causes another change in the microclimate, through increased aridity that is a threat to microflora and microfauna and causes changes in the soil even if it is not entirely uncovered. For this reason, the most modern forestry techniques advise great caution in destroying or even simply thinning the maquis, and are more inclined to combine two parallel and inseparable lines of action: improvement of production and conservation of the environment, the latter finding its chief expression in the vegetation-soil equation. This is a position halfway between the extreme tendency towards conservation of the status quo at all costs, as if everything in nature were static and not dynamic, and the equally extreme tendency to make an immediate profit without thought for the morrow, that is to say for our obligations to future generations. Society in fact cannot survive without a sense of continuity, and therefore where there is real incompatibility there should be no hesitation in choosing the solution of keeping the vegetation in its natural state. On the other hand, when compatibility



Example of maquis with tree heather developing in the integral nature reserve on the Island of Monte Christo (Italy).

Example of the onset of deterioration in Ilex maquis near San Felin on the Costa Brava (Spain).



between conservation and production is possible, both being kept under control by the constant and technically organised presence of man, cautious action may be taken with the object of achieving increased production of various kinds without causing any disruption. At the moment it is thus much more important and useful to recuperate in some way areas that have already been devastated than to intervene to alter those that still preserve their natural vegetation, with the almost certain danger of upsetting the balance of the ecosystem. In assessing the importance of the maquis we do not then adopt an economic viewpoint in the commonly understood sense, i.e. an assessment of the possibility of intensive and immediate exploitation; from this angle, in fact, the maquis is less productive than other types of vegetation that might take its place. The economic value of the maquis is reckoned quite differently, taking a long term view; i.e. bearing in mind its role as a safeguard for the environment: its close vegetation is an efficient aid to water control and protects the soil from erosion, while its biochemistry improves the profile, preparing it for the natural growth of the forest; it creates and preserves a microclimate which, extending over wide continuous areas, can also have a local effect on the general climate; it is more resistant to disease or pollution than other types of vegetation (e.g. pine forests), and does not need mud maintenance; finally, the maquis presents us with a typically Mediterranean landscape which is no less appealing than others and can be appreciated by tourists.

On the basis of these considerations, the Committee of Ministers of the Council of Europe, as a consequence of studies effected by the European Committee for the Conservation of Nature and Natural Resources on the causes of the deterioration of the Mediterranean maquis and its importance, has produced a draft recommendation calling upon the member states to:

1. make a national phytosociological and cartographic survey of all areas of natural vegetation, whether forest or maquis;

2. place a general ban on any deterioration of existing forestland and maquis;

3. endeavour to limit the planting of fast-growing tree species (pine, eucalyptus, etc.) to areas of little biological value by reconstituting natural vegetation within a reasonable time wherever possible;

Complete destruction of maquis following an uncontrolled fire started up to clear space for pasturage; the bare soil is immediately exposed to erosion, which reaches the bare rock on the steeper slopes (60 km from Antalya, Turkey).

4. prohibit intensive monoculture of forest species over large areas and replace it by plantations in a mosaic pattern or in strips alternating with natural maquis and climax forest;

5. promulgate outline laws for physical planning in the light of a thorough study of the situation by specialists and, in consultation with these specialists which:

— prohibit any major action wherever planning has not yet been carried out;

— impose severe penalties for any violations of planning provisions together with an obligation to restore the land to its original state;

6. prohibit the lighting of fires in maquis areas as well as the burning of scrub outside authorised periods and areas, with severe penalties for anyone contravening such provisions;

7. provide the logistic means necessary for the prevention, detection and fighting of fires;

8. so far as possible, prohibit livestock in maquis and areas where maquis is to be restored, encouraging reduction of goats in favour of sheep;

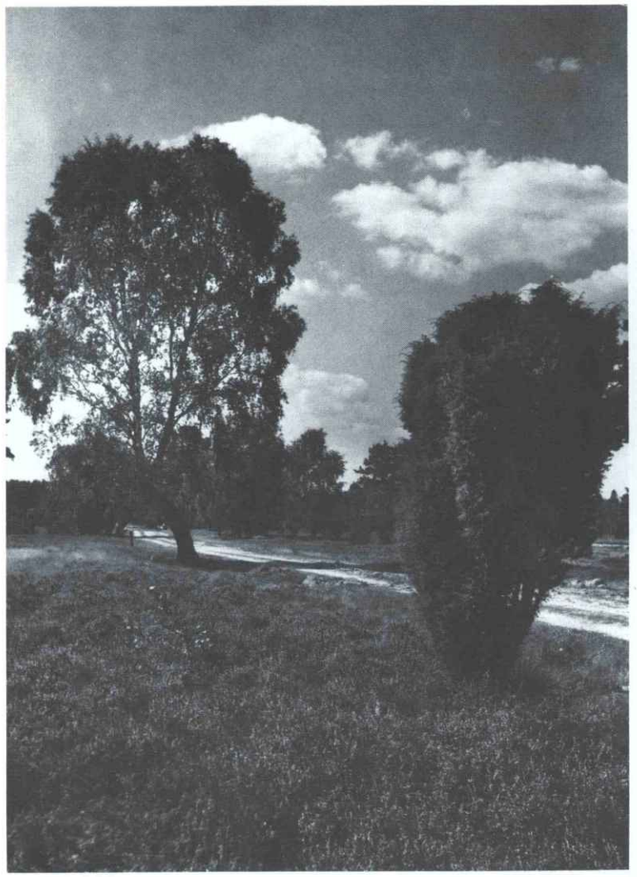
9. reduce grazing areas by limiting extensive pasturing and replacing it as far as possible by intensive stock-breeding;

10. limit tourist activities to the extent compatible with the ecological capacity of the maquis, and strongly campaign against camping and caravanning on unauthorised sites;

11. arrange in consultation with specialists for the establishment of protected areas for the main types of natural Mediterranean vegetation, including forest, as part of the Council of Europe's network of biogenetic reserves and UNESCO's world-wide network of biosphere reserves;

12. provide general information for the central and regional administrations, local authorities, regional planning bodies, farmers and professional associations on the usefulness of maquis and the steps to be taken for its preservation.

The final point in this list is very important: in fact prohibiting certain action has a negative effect, while the conviction that such action is harmful makes it easier to promulgate laws and rules and to accept restrictions. It may be deduced from the above recommendations, which sum up studies and reflections that have been carried out and assessed at various levels of competence, that conservation of the Mediterranean maquis is of prime importance and is only possible with ecological planning of the territory carried out on a scientific basis and taking into account the general interests of the community and not the sectional interests of certain groups.



The Heathlands of Western Europe

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Heathlands are ancient landscapes of Western Europe which were for hundreds of years linked to a pastoral economy. Because of their unique position among our plant systems, heathlands soon aroused the curiosity of naturalists and, since the beginning of the century, they have been the subject of ecological, historical and botanical studies. They are today the subject of revived interest; in regions where they have almost disappeared, efforts are being made to preserve their last vestiges as biological reserves; where they still extend over a large area, the artistic and cultural value of their landscapes is being rediscovered as is the opportunity for relaxation and recreation they offer visitors.

In all heathland regions the pastoral economy also developed a life-style and folk-lore, and a comparative study would probably reveal many similarities. But these traditions have scarcely survived except in Scotland and the Cantabrian range. They bear witness to a rural civilisation so well adapted to its environment that it remains one of the more striking models engendered by the European genius in the incomparable diversity of its habitats and ethnic sub-divisions.

* * *

The immediately striking feature of heathland is its physiognomy. Made up of dense thickets of tiny-leaved evergreen bushes (heather or Ericaceae) and of small clumps of furze of the Genista group (gorse or broom depending on the regions), this formation is similar to some types of Mediterranean vegetation, such as the "Garriques" in the South of France, the "Tomillares" in Spain or the "Phryganas" in the East. Indeed it is related to them, since heather, gorse and Cistus (in Cantabria) are species of which the phylogenetic cradle seems to be situated in the Western Mediterranean. The Ericaceae themselves belong to the archaic flora of Africa, now concentrated in the area of the Cape, where there are 500 species of *Erica* compared with a score in Europe.

Heather has straight, finely ramified stems, which enable it to form dense thickets varying in height from 25 to 75 cm, depending on age, which may be 20 to 30 years. After being cut down by grazing or fire, it throws out roots and, if the soil remains bare, germinates abundantly. Heather has richly coloured flowers, ranging from pink to purple depending on the species. It is also a melliferous plant visited by bees, bumble bees, Diptera, thrips and sometimes butterflies. The most extensive, namely *Calluna vulgaris*, was once used for its tannin.

Genista also easily spreads its root-growth and germinates on open soil. It is therefore also well suited to burning, grazing and cutting. Gorse used to serve as fodder and was grown in some places for that purpose.

A feature common to all these species is their ability to colonise very acid and poor soil. Their favourite habitats are first of all the sandy plains of Atlantic Europe, formed by morain or fluvio-glacial deposits, accumulated during the last ice age and sometimes of considerable depth (Aquitaine, Sologne, the German Plain). They are also to be found in the area formed by the old sandstone and schist, or granite, sub-strata which make up the Cantabrian massif, from

Galicia to the Pyrenees, Brittany and Cornwall, Wales and Ireland, Scotland, the Caledonian Islands and the southern Norwegian fjords. Heather grows well on very mediocre substrata, because its roots live in symbiosis with fungi (Mycorrhiza) which decompose organic matter and transfer the nutritional elements to the heather. In the case of the Genista the roots have nodosities inhabited by bacteria capable of fixing the free nitrogen in the atmosphere *(Rhizobium)* thereby providing their nitrogenous food. Consequently, the heathland ecosystem makes the most of the indigenous soil, which many other plants would not be able to colonise without prior improvement or fertilization.

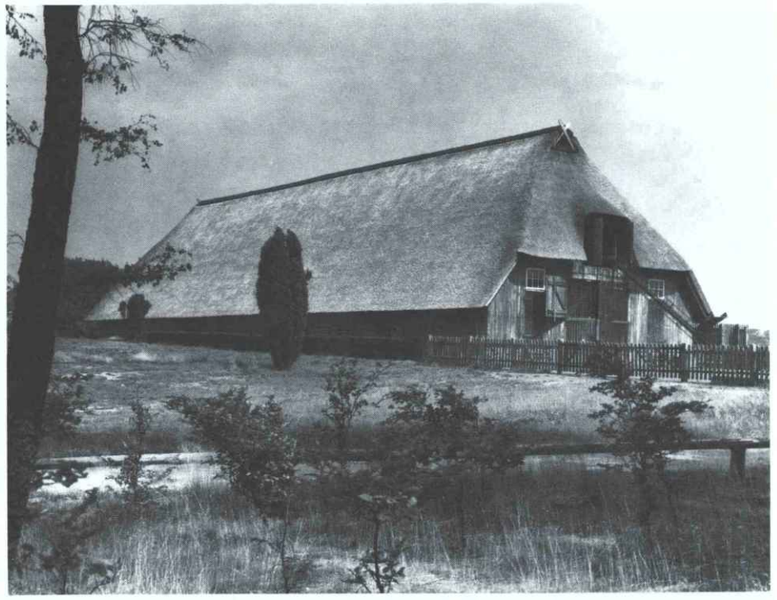
* * *

The typical features of this formation are connected with the Atlantic areas of Europe. It may be said that heathland is the progeny of the ocean, since it does not grow beyond 200–300 kilometres from the coast. Its species cannot withstand the freezing winters and dry summers of continental regions, and although their habitats resemble those of the Xerophytes (plants growing in dry places or climates) it is known that their plantlets are very sensitive to a dry atmosphere. Consequently, heathlands can flourish and multiply only in the humid atmosphere of plains and hills bathed by sea winds.

These conditions explain why there are two main belts of heathlands stretching across Europe. The first covers the Atlantic gulf of Europe from Galicia to Ireland. This is made up of heathlands of heather and gorse (Ulex) particularly rich in species, especially endemic ones (which exist nowhere else but in these territories). Obviously, that is where the geobotanic optimum of the formation is to be found.

The second belt is around the North Sea gulf and the western Baltic: these are the sub-Atlantic heaths with Calluna and Genista, where the Ericaceae are reduced to two or three species and no gorse grows.

At altitude heathlands are enriched with bilberry (Vaccinaceae). This is the case in upper Cantabria and the Basque Pyrenees, on the western slopes of the Cevennes, in the Scottish and Welsh Highlands and the lower mountains of the Hercynian system, from the Ardennes to the Sarreland and from the Vosges to the



The heathland is a singular and attractive biological and aesthetic heritage; it is also a highly original remnant of old rural cultures in our continent and, in that respect, has the value of a cultural heritage.

Harz mountains. There are still some isolated "exclaves" in the western Alpine foothills and a small heather heathland is to be found on the diluvian sands of Lago Maggiore in Northern Italy[1].

The foregoing outline of the distribution of heathlands establishes what might be called their "potential" location, but not their present extent, which has considerably decreased over the last hundred years. Heathlands have a very long history, closely bound up with the progress and decline of pastoral economy in Western Europe.

The paleo-botanical and paleo-pedological indications, to be found

Pastoral economy has survived in certain heathland regions, based for the most part on sheep-rearing, but it tends to be poor and archaic, and the people living there are sometimes condemned to such marginal living conditions as to be intolerable in the world today.

In all those regions where heathlands have considerably declined, their last vestiges must be protected. Many countries have understood this and western Europe already has a large number of small heathland reserves. Their protection can, however, be effective only at the price of sometimes meticulous interventions, which must replace pasturing by equivalent maintenance operations (cutting, periodical burning).

mainly in prehistoric barrows, show that the first expansion of heathlands occurred as far back as neolithic clearings, more than 4,000 years ago.

In the Iron Age, there was already considerable expansion in the sandy plains and adjacent hills. The Germanic, Celtic and Iberian populations of that period practised pastoral agriculture and stock-breeding on a considerable scale, as Caesar's comments in his account of the Gallic War imply. Throughout the Middle Ages and modern times, forests have continually receded before the encroachment of heathlands under pressure from rural communities. The famous Luneburg Heath, in Lower Saxony, was still a forest at the end of the Middle Ages, and confirmation of similar instances has been found in other regions. There can, therefore, be no doubt that heathlands, with the exception of dunal or sea-coast heaths, are secondary landscapes, replacing forests, providing grazing for flocks and herds and so preventing any self-sown reafforestation.

The greatest expansion of heathlands occured in the later 18th century. For example, they covered vast areas, from the Pyrenees to the Sologne on the maps of Cassini (1760), and in Lower Belgium and the Luxembourg Ardennes on the map of the Austrian Netherlands made by Ferraris (1770–1775).[2]

But pastoral economy was soon to go into a decisive decline. The introduction after 1850 of exotic wools and the abandonment of the practice of leaving land to lie fallow, after fertilisers were invented, led to a rapid decrease in sheep farming. Heathland grazing was given up and the soil was replanted with trees (pines in the plains, spruce in the lower mountains) or cleared and converted into farm land or meadow. In many regions where this evolution occured, heathland now comprises only a small percentage of its former extent. Some areas, however, have escaped this transformation: the peripheral regions of Ireland, Wales and Scotland and, in Northern Spain, a large part of Galicia, Asturias and the Basque Pyrenees. Pastoral economy has survived in these parts, based for the most part on sheep-rearing, but it is poor and archaic, and the people living there are condemned to such marginal living conditions as to be intolerable in the world of today. The words of A. S. Watt in 1961 may truly be applied to them: the heather is both the glory and the tragedy of the Scottish Highlands.

* * *

However, there is hardly anything more typical than heathlands where those responsible for environment in western Europe may deploy their determination and imagination. The heathland is a singular and attractive biological and aesthetic heritage; it is also a highly original remnent of old rural cultures in our continent and, in that respect, has the value of a cultural heritage. Finally, it remains a vast laboratory of nature which is far from having revealed all its secrets. Can there be more pertinent arguments for advocating its conservation?

In all those regions where heathlands have considerably declined, their last vestiges must be protected. Many countries have understood this and western Europe already has a large number of small heathland reserves. Their protection can, however, be effective only at the price of sometimes meticulous interventions, which must replace pasturing by equivalent maintenance operations (cutting, periodical burning). Many experiments in this respect have been carried out in Sweden, Germany, Great Britain, the Netherlands and Belgium. But the problem has another aspect in the vast heathland regions where pastoral economy, in its present forms, is bound sooner or later to disappear. This is where ways must be found to protect it by measures providing it with a multiple-use function: for example, combining a renovated pastoral economy with a genuine cynegetic and recreational vocation.

In this respect, there are, fortunately, original initiatives in the Pyrenean heathlands of the Haute Soule, mainly concerned with renovating the breeding system and its infrastructures, crucial problems are being tackled in the Scottish Highlands, where the ecology of heathland, sheep and game is being studied. These various approaches are important; yet they must be crowned by political action and the conviction that it is not extravagant but, quite the contrary, that it is desirable and essential to grant the necessary funds to protect these landscapes and ecosystems of another age.

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1 In Northern Europe and the Alps, heather heathland is replaced by the growth of boreo-mountain Vaccinaceae to which the name heathland cannot be applied without corrupting the term. The word "lande" is of Celtic origin (lann in Gallic) and specifically denotes an Ericaceae formation. The same applies to the terms "heath" and "Heide" in the Germanic languages.

2 This map, scale about, 1:20,000, is remarkably accurate for the period; it shows the exact location of heathlands, forests, fields and dwellings.

France: The Regional Parks

("Parcs naturels régionaux")

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In France the setting up of "regional parks" has been suggested by the rigidity of the concept "national park". To qualify for that title a "national park" has to cover an area which is completely or almost untouched by man: such areas no longer exist in France except in the high mountains.

The need for recreation areas and the desire to preserve man-made landscapes as a living memory has led to the idea of regional parks.

Their definition resulted from that consideration and also from a study of schemes in neighbouring countries: the Lüneburger Heide Naturpark in Federal Germany, the Bokryk Park in Belgium and the Upper Veluwe National Park in Holland have shown how much can be gained by bringing the ideas of leisure pursuits, culture, landscape, arts and popular traditions closer together.

During that same period, the Government was studying numerous plans for "parks" emanating from a number of regions in France. The definition of regional parks emerged in 1966 from a comparison of these experiments and projects.

Mr Olivier GUICHARD, then responsible to the President for Town and Country Planning and Regional Policy, defined the aims as follows:

"— to provide large cities with natural recreation areas;
— to give life to certain rural sectors, particularly those which are most difficult to adapt to the needs of modern agriculture;
— to protect nature and sites in adequately large areas."

The statutory basis for the setting up of regional parks was provided on 1 March 1967 by a government decree[1] which was original in that it based the regional park on a contract between the state and the local authorities. This contract, the park's constituent charter, does not assign special powers to the body responsible for the management of the regional park: it defines the park's specific objectives and the way in which each of the public authorities concerned is to use its powers to achieve these objectives[2].

The decision to set up a regional park is taken not by the state but by the local authorities *(communes* or *département)* which are in charge of implementing the project based on the approval of the constituent charter by the state and, since 1975[3], following a special decision by the "Region" which must first endorse the local authorities' initiative.

In practice, the creation of a regional park consists in the drawing-up of a constituent charter which must be approved by the local authorities, the region and the state. The region finalises the charter. On average it extends over two or three years, but sometimes it may cover five. In order to be approved by the state the charter must contain options on the occupation of land which are decisive for the quality of the landscapes which the regional park is designed to protect and organise.

The need for these options throws light on numerous clashes of interests not all of which are private: clash of public interests over the protection of the countryside and mining activities designed to provide minimum security in supplies of raw materials for the country. Public interests also clash over the protection of the area covered by the regional park against noise from the overflight of aircraft whose abatement is restricted by the earlier laying down of infrastructures. In such disputes involving national interests the state acts as arbitrator on the basis of an opinion submitted by the Interdepartmental Committee on Regional Parks.

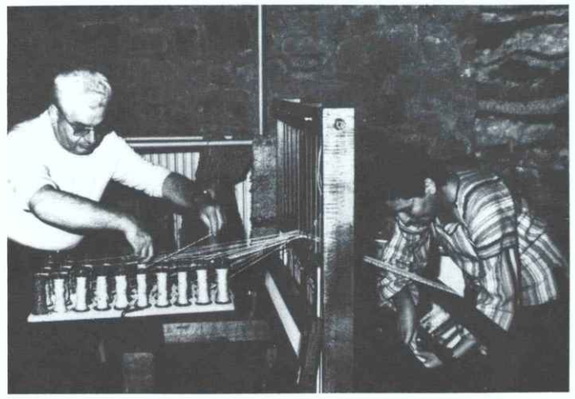
Nevertheless most options are made at local level and this does not simplify matters: one of the most frequent potential disputes is that opposing agricultural and forestry activities and tourism. The massive increase in the number of town-dwellers visiting the countryside results in numerous nuisances: the trampling down of crops, the dumping of rubbish, forest fires etc. The resulting damage is deeply resented by country people who, in France, are still usually farmers. Accordingly the creation of a regional park must be seen and conceived as a means to protect agricultural and wooded land, and to organise the tourism and traffic so as to direct it towards amenities and areas where it will do no damage. But until the creation of regional parks there were few, if any examples of organised rural tourism which could have met with the approval of country people. Several plans for regional parks have failed. Others have succeeded despite that difficulty and now prove that the coexistence of townsfolk and country people is feasible, provided that the latter combine their resources.

Although regional parks have no power to restrict hunting, the very word "park" conjures up the large nature reserves with their ban on hunting: that misunderstanding is the source of considerable reluctance and sometimes months of explanations are necessary to overcome it.

Another serious difficulty arises out of the commonly-held idea that secondary residences would constitute a vital economic resource for rural *communes* with no industry. Although a close examination of the situation reveals the falsity of this belief, many rural *communes* authorise the building of weekend cottages without any conditions, to the great detriment of the landscape and, in the long run, to their finances.

The creation of a regional park obviously pre-supposes giving up this anarchic practice. The relevant provisions of the constituent charter are among the most difficult to decide upon. It has to be realised that in most cases regional parks could only be established by lowering their sights sharply in this respect.

Ecomuseum of the Grande Lande — Regional Park of the Landes de Gascogne.



Weaving workshop — Pilat Regional Park.

Thatching in the Brière Regional Park.

Rebuilding traditional framework — Regional Park of the Landes de Gascogne.

Restoration of a sheepfold — Regional Park of Corsica

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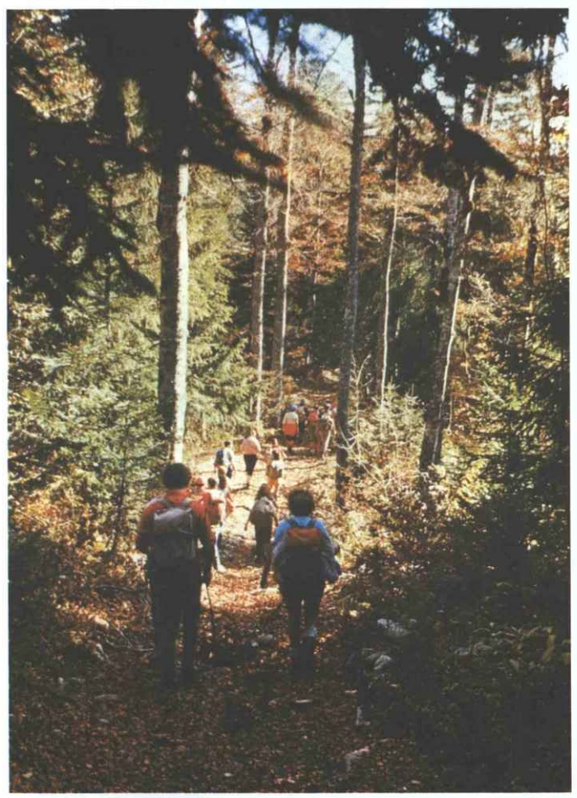

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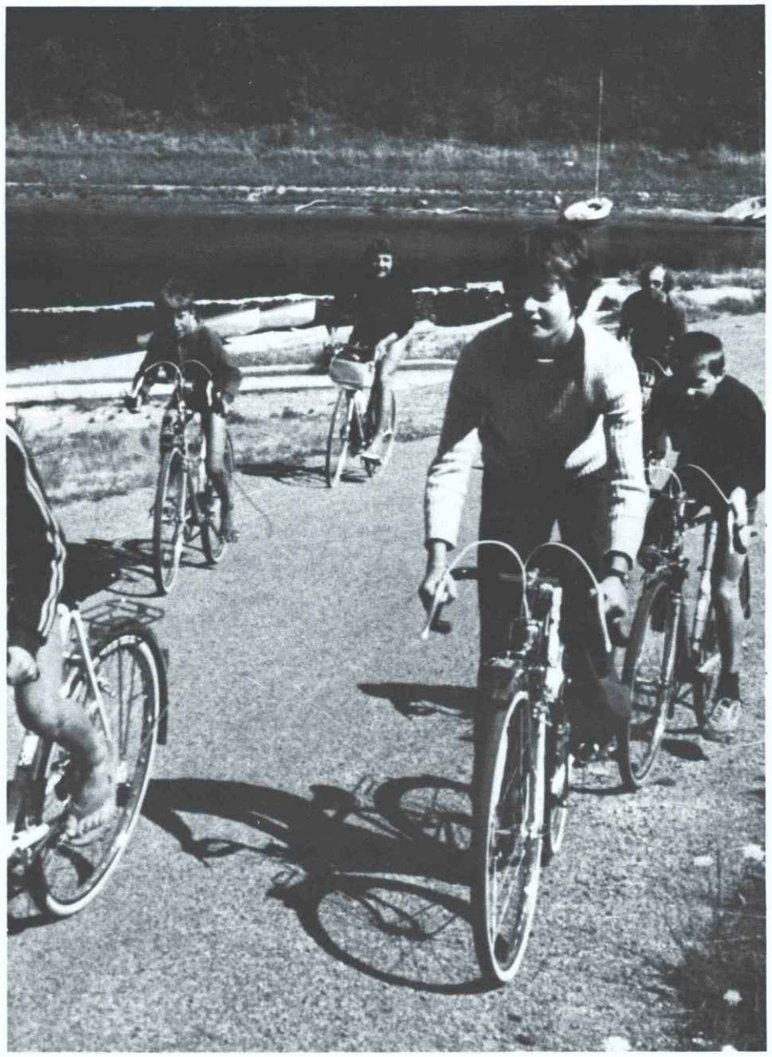
1 *Regional Park of Lorraine*
2 *Farm circa 1772 — Regional Park of the Landes de Gascogne*
3 *Regional Park of Corsica*
4 *House in the Brière Regional Park*
5 *Landscape of the Vercors Regional Park*
6 *Col de Sarna — Vercors*
7 *Vercors*
8 *Brière Regional Park*
9 *Kerhinet Ecomuseum — Brière*
10 *St Martin Footpath — Vercors*
11 *Train which goes right to the heart of the Regional Park of the Landes de Gascogne.*



Cycling tour in the Haut Languedoc Regional Park.

Every regional park mixes the various objectives common to all parks (economic revival, tourism and the harmony of the landscape) in proportions suited to local conditions.

The necessary compromises between diverging interests are, in the last resort, reached by the political representatives of the authorities responsible for the territory covered by the projected regional park. The value of these compromises in relation to the definition of regional parks is assessed by the Interdepartmental Committee, on the strength of whose opinion the Minister responsible for the Quality of Life and the Environment can approve the charter for the regional park and thus authorise its official creation by the region.

The constituent charter[4] does not settle finally all the problems concerning the harmonious planning of the countryside. Its aim is also to provide a framework for decisions to be taken at a later date and to set up a body specially responsible for implementing the programme of action contained in the charter.

That body which constitutes the authority of the regional park is usually a regional public body on which *communes, départements* and farmers' and craft associations are represented. The state is not represented.

It has its own budget financed by its members and subsidised by the state[5]. Accordingly it can undertake management and equipment operations whose programme has been defined in the charter setting up the regional park. Although it has no special powers it represents a public service for the public authorities in the area of the park, and as the years pass its advice and proposals are increasingly followed.

Actually 6 years after the creation of the first regional parks their work is now coming up to expectations. The wide range of geographical, social and economic situations which they have to deal with makes it impossible to give an absolutely representative picture of this work. But the following examples will help to illustrate its nature and methods.

Action takes place mainly in the three fields corresponding to the objectives of regional parks: the protection of landscape, economic activity and tourism. A feature common to such action is the attempt to establish interaction between the three main fields in which it takes place. Another important objective is to take over sectors in which rural authorities are

Fruit market in the Brotonne Regional Park.

unable to intervene because of their small size.

For example the Corsican Regional Park, which stretches from the mountains down to the sea at the magnificent Porto Gulf, has begun an extensive restoration programme for high altitude sheepfolds. Thanks to that operation, stock farming which was dying out is now reviving, flocks are more numerous and an encouraging development is that the average age of the shepherds has decreased. The Corsican mountain is coming to life again. The second phase of the pastoral programme will consist in creating fire-belt pasturage at medium altitudes to prevent the spread of fires and restore the balance in forage resources, thereby providing a better basis for sheep farming. At the same time the park has built a number of shelters on the track along the crest of the mountain. These prevent the shepherds being disturbed by hikers, who are so numerous that it has become impossible to look after them in addition to the sheep. This scheme illustrates the three-fold vocation of the regional park: tourism, the economy and protection of the landscape.

Another illustration is provided by the Haut-Languedoc Regional Park: the magnificent heathland landscapes in this medium-high mountainous region of the sourthern Cevennes, once predominantly a grazing place for sheep, are threatened with almost total afforestation with resin-producing trees. Since it was unable to ban plantations, the regional park has decided to help the few farmers who still cling to these mountains to develop modern stock farming by providing them with a qualified technical adviser. Today reafforestation has a serious rival: stock rearing, which requires space and maintains the countryside and the men who live there.

A further example: the mouths of the Seine situated in the Brotonne Regional Park owe their attraction to the orchards in the alluvial plain. The transformation of the region had led to the disappearance of commercial circuits and immediately the abandoned orchards began to disappear. The Brotonne Regional Park revived two major fruit fairs to attract the inhabitants of neighbouring towns: apple and cherry trees will continue to blossom along the banks of the old river on which the cargo ships sail.

An important element making for the harmony of the countryside is the architectural quality of its buildings. The power to authorise building does not lie with the regional park but with the communes. Accordingly, most parks have developed an information campaign following the example of the Brière Regional Park. This takes the form of architectural assistance which consists in providing builders and local authorities with technical data concerning architectural styles adapted to the local characteristics of the countryside and supplying information direct to people who want to build. Almost every regional park thus has one or more architects who are regularly available in the main villages. Sometimes this direct action is supplemented, as in the Brotonne Regional Park, by long-term education campaigns consisting of construction "games" for children and also for municipal councillors.

An original scheme in France aimed at the scientific and educational conservation of the heritage of popular arts and traditions (houses, furniture, organisation of space, legends, tools etc.) is the setting up of ecomuseums. The most successful example is the ecomuseum in the Landes de Gascogne Regional Park which has reconstructed in the heart of the Landes forest an "*airial*", an area sheltered by oak trees where the farmer of the last century built his house, his sheepfold and his kennels. This operation, which had its origins in the "open-air museum" found in northern European countries, reconstructs not only the buildings and their interior furnishing but also the agricultural surroundings which were their raison d'être. This "space" museum, which already performs an important educational function, is to be supplemented at a later stage by a "time" museum, which will show how men used land in the light of the changing factors of their technologies and society down the ages.

The avowed aim of this second stage of the ecomuseum is to promote a better understanding of the organisation of the countryside and accordingly to facilitate regional-planning decisions as that countryside changes in the years ahead. Such a scheme involves not only considerable expenditure on facilities but also high running costs to pay the guide-lecturers. It is

not a profit-making venture since the local authorities have sought to make it as widely accessible as possible because of its educational purpose.

The Corsican Regional Park has begun a much more direct operation for nature conservation: a boat and two wardens keep continuous watch over the last surviving fishing eagles.

But its important campaign, now completed, was convincing *communes* and fishermen of the need to create a marine reserve in which fishing would be banned so as to preserve an adequate fish population to provide food for the eagles.

The action of regional parks also affects tourist leisure activities. Most parks, such as the Northern Vosges Regional Park, organise rambles to help discover nature and the local architecture. In some cases this organisation is planned well ahead of the activity itself. For example the Vercors Regional Park has organised training sessions for ski-tour guides, intended for young farmers who thus find a way of supplementing their income. This same regional park has provided a service designed to replace farmers, thus enabling them to take holidays without abandoning their flocks. Thus, the park's activities are concerned not only with tourism but also with the development of a modern form of life in the countryside.

Generally speaking, the aim of regional parks when they organise leisure activities is to facilitate contacts between the country people living in the park and the town dwellers who come there to relax. Typical examples are cycle tours in the Haut-Languedoc Regional Park and hacking excursions in the Armorique Regional Park. The regional parks hope to promote better understanding by these meetings between town dwellers and country people, quite apart from the benefits which both groups derive from them.

Every regional park can provide examples of original schemes whose common feature is that of seeking to combine local life, the development of leisure activities suitable for the countryside and the protection of the countryside itself in one and the same activity.

This work is the responsibility of the park administration, which is less a supervisory body than a team of *animateurs:* it provides information, makes proposals and runs campaigns when the rural authorities do not have adequate means because of their small size.

The membership and organisation of this team vary considerably: between 10 and 50 people including the agronomist, the biology teacher, the museologist, the specialist in open-air sports and the cowman.

All these experiments are compared in the context of a Federation of French Parks [6] composed of representatives of local authorities, park teams, formers and landowners. This Federation receives State aid which permits it to offer regional parks technical support in specialised subjects whose use is not required frequently enough to justify the presence of a specialist in every park.

The first regional parks were established in France barely five years ago. They have not always been successful. The flight from the land has not yet been stopped; badly-sited buildings of doubtful architectural taste are still being built and disfigure the countryside here and there.

Nevertheless the result as a whole constitutes a sufficiently important step towards the targets laid down for them to enable the Minister for the Quality of Life to say: "I should like to reaffirm that the regional parks are an essential part of our overall regional planning policy. The parks share in the general policy aimed at the better distribution of the population throughout the whole country and the human and economic revival of rural areas."

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1 Decree No. 67,158 of 1 March 1967, setting up regional parks, subsequently superseded by Decree No. 75,983, see below.

2 A typical regional park has an area of 100,000 hectares divided among several dozen **communes** belonging to one or more **départements** in one or two regions.

3 Decree No. 75,983 of 24 October 1975 concerning regional parks.

4 The region shall draw up the constituent charter of the park in collaboration with the local authorities and bodies concerned. If the proposed park overlaps several regions, they may appoint one from among them to establish the constituent charter.
The charter can be amended under the same procedure.
The charter shall comprise, inter alia:
1. The designation of the public or private body responsible for planning and management of the park with the participation of representatives of those persons living there or owners with property in the park and its users, possibly in the form of an association.
2. A plan of the park showing its boundaries, the site of the facilities planned, and the location of the different areas according to their intended use.
3. Details of measures which it appears necessary to take in the context of existing laws and regulations.
4. The programme for future facilities and the plan for financing them, together with an estimate of measures to ensure the balanced management by the body referred to under para. 1 of this article; for which purpose the charter shall contain particulars of the respective commitments of the various parties concerned. (Article 3 of Decree No. 75,983)

5 During the last 3 years (1973–1975) regional parks have been financed on average as follows:
the state: 25 % for management
60 % for facilities
local authorities (regions, départements, communes) 75 % for management
40 % for facilities

6 The Fédération des Parcs Naturels de France, 45, rue de Lisbonne, 75008 PARIS, disseminates all information concerning regional parks.

LIST OF REGIONAL PARKS IN FRANCE

— ARMORIQUE Regional Park created in 1969
28 **communes** — area 65,000 hectares
— BRIERE Regional Park created in 1970
16 **communes** — area 40,000 hectares
— BROTONNE Regional Park created in 1974
35 **communes** — area 40,000 hectares
— CAMARGUE Regional Park created in 1970
2 **communes** — area 82,000 hectares
— CORSICAN Regional Park created in 1972
53 **communes** — areas 150,000 hectares
— FORET D'ORIENT Regional Park created in 1970
39 **communes** — area 60,000 hectares
— HAUT-LANGUEDOC Regional Park created in 1973
68 **communes** — area 130,000 hectares
— LANDES DE GASCOGNE Regional Park created in 1970
23 **communes** — area 206,000 hectares
— LORRAINE Regional Park created in 1974
196 **communes** — area 181,000 hectares
— MARTINIQUE Regional Park, creation planned October 1976
30 **communes** — area . . .
— MONTAGNE DE REIMS Regional Park, creation planned October 1976
68 **communes** — area . . .
— MORVAN Regional Park created in 1970
64 **communes** — area 173,000 hectares
— NORMANDIE-MAINE Regional Park created in 1975
128 **communes** — area 234,000 hectares
— PILAT Regional Park created in 1974
42 **communes** — area 60,000 hectares
— SAINT-AMAND-RAISMES Regional Park created in 1968
15 **communes** — area 10,000 hectares
— VERCORS Regional Park created in 1970
53 **communes** — area 236,000 hectares
— VOSGES DU NORD Regional Park created in 1976
96 **communes** — area 117,500 hectares

LIST OF REGIONAL PARKS UNDER STUDY

— LUBERON Regional Park
— MARAIS-POITEVIN Regional Park
— QUEYRAS Regional Park
— VOLCANS D'AUVERGNE Regional Park
— ARDENNE Regional Park

The role of regional ethnology and the Historical-Archaeological Research Centre at Lejre in environmental interpretation and education

Hans-Ole HANSEN,
Director of the Historical-Archaeological Research Centre, Lejre, Denmark

THE FIELD: THE PAST IN THE FUTURE

It is generally believed that the past concerns only art treasures, buildings, crafts left by our ancestors and has nothing to do with the future.

An art and history museum is a shrine where objects are kept. A modern landscape is another kind of museum where objects are also kept — hidden in the soil or standing as monuments on the ground — even living objects of the past are kept by nature in this museum. The present is an integrated part of this museum and adds another dimension to the "collection". The days to come will do the same.

Because of the total integration of man in this "environmental museum" he does not easily realise how much is created by past generations and past events in nature.

HISTORY

Man relies only on a common physical "frame of reference". He presupposes that everyone speaking his language will understand his feelings, words and doings and thus, we use the past as a common language. If not, we would communicate like small children: just talking about present events. History is created by modern minds in modern brains. If mankind dies out, his history is gone forever. In our thinking and philosophy we mould and change our ideas of the past according to our spiritual and social life of the present.

Thus history represents a most important tool of humanism, for creating awareness, and for keeping up a common language.

ETHNOLOGY

— **Ethnology** is the study of culture and society in general. In Anglo-Saxon language ethnology is called anthropology.

— **Social anthropology** studies social, political, economic and ritual organization, as well as cultural values and evaluations.

— **Cultural anthropology** is based on human experiences, skills, behaviour, statements and social institutions. It thus covers a broad range of fields such as technology, art, aesthetics and linguistics are often included.

— **Ethnology** (or anthropology) includes disciplines such as archaeology, history and branches of the natural sciences such as palaeozoology and palaeoclimatology.

— **Regional ethnology** studies the similarities and differences between regions or localities in terms of both the natural and cultural aspects of the environment. It is best approached through the study of cultural ecology and by the use of "imitative experiments".

— **Cultural ecology** is concerned with the environmental energy that is accessible to man, and the effect of its use on society.

— **Imitative experiments** ("experiments in archaeology") are controlled experiments in which the natural conditions of a past situation or process are simulated as far as possible. The observed experimental data are of great value to disciplines such as archaeology, ethnology, history and palaeozoology.

THE STUDY CONFERENCE IN THE NETHERLANDS 1975: ECOLOGY AS AN APPROACH

In 1975 the Netherlands authorities organized, in co-operation with the Council of Europe, an International Study Conference on Environmental Education in rural and urban settings. At this conference specialists from ten countries were confronted for the first time with the whole range of practical examples of environmental education methods available in Europe.

One example was the "look and learn" method of teaching biology, based on the observation of living plants and animals. This method is based on:

— The importance of learning to discover for oneself.

— Observational skills are more important than exercising the memory.

— Knowledge from first-hand experiences is more important than knowledge from theoretical learning.

— Appreciation of overall systems should replace the learning of isolated facts.

In the Netherlands, the "School and Children's Garden Service" operates on four educational levels, geared to the children's age groups:

1. Learning how to treat animals and plants (pre-school).
2. Contact with animals, plants, soil and water, learning to observe (primary education).
3. Patterns of relationships existing between plants, animals, man, soil and climate (secondary education).
4. The social factors behind responsibility for interventions with nature (education of lasting value).

Further insight into didactics and methodology was gained from a paper on "The Hannover Centre for School Biology" (Federal Republic of Germany) which gave examples of teaching methods in botanical gardens.

The Centre functions at four levels:

1. Supply and loan (complete or individual teaching packages).
2. "School garden help".
3. Courses for school children.
4. Teacher training and "ad hoc" course projects.

One of the conclusions of the paper was that the scope of teaching in botanical gardens should be enlarged to encompass environmental education as a whole.

In the Netherlands, the "School and Children's Garden Service" operates on 4 educational levels, geared to children's age groups: 1) learning how to treat animals and plants; 2) Contact with animals, plants, soil and water, learning to observe; 3) Patterns of relationships existing between plants, animals, man, soil and climate; 4) Social factors behind responsibility for intervention.

In the Centre, "School garden help" aims basically at taking care of the school gardens, and courses are organised at all levels. Teaching gardening in this way raises a number of interesting questions:

— What impact does dealing with something alive have on the early development of human beings?

— Can gardening serve as therapy?

— What are the criteria for basic courses in gardening?

— What are the reasons for decreasing interest in gardening?

Teacher training is a very important part of the Hannover Centre, since both biologists and non-biologist teachers may register, for these courses and other student courses. The instruction offered is purely demonstrative and experimental and every topic may be treated in every age group and on every school level.

Another paper discussed the problems of biology teaching in large cities, based on examples from a comprehensive school in East London, England, and from the in-service training of London's science teachers and primary teachers. A particular problem raised was, what does the theme "Conservation of resources" mean to a group of children raised in a consumer society?

Another example described the introduction of living organisms into the classroom for the first time, which helped the children assisting in the care of the animals and plants to develop reliability and a sense of responsibility.

THE STUDY CONFERENCE IN DENMARK 1976: THE ETHNOLOGICAL APPROACH TO ENVIRONMENTAL INTERPRETATION AND EDUCATION

A comparison of the ecological and ethnological approaches to environmental interpretation and education showed that:

— Many of the didactic and methodological problems and possibilities are the same, but whereas both approaches promote environmental awareness, the ethnological approach takes time into account and thus considers the changes in society as well as in the natural environment of man.

The main disadvantages of the ethnological approach to environmental education, not using the "workshop technique" as a teaching method are set out below.

— The relevance of History and the Past tends to be obscured by the great amount of news fed to modern man by the mass media.

— Urban dwellers no longer have sufficient direct contact with elements of nature such as soil, plants, animals, fire, and basic tools.

— Both urban and rural dwellers now tend to think of the natural environment in terms of mechanized farming, industrialized forestry, the "useless-land-made-useful-idea", new roads, new towns, etc. etc. often without realising the effects of such uses.

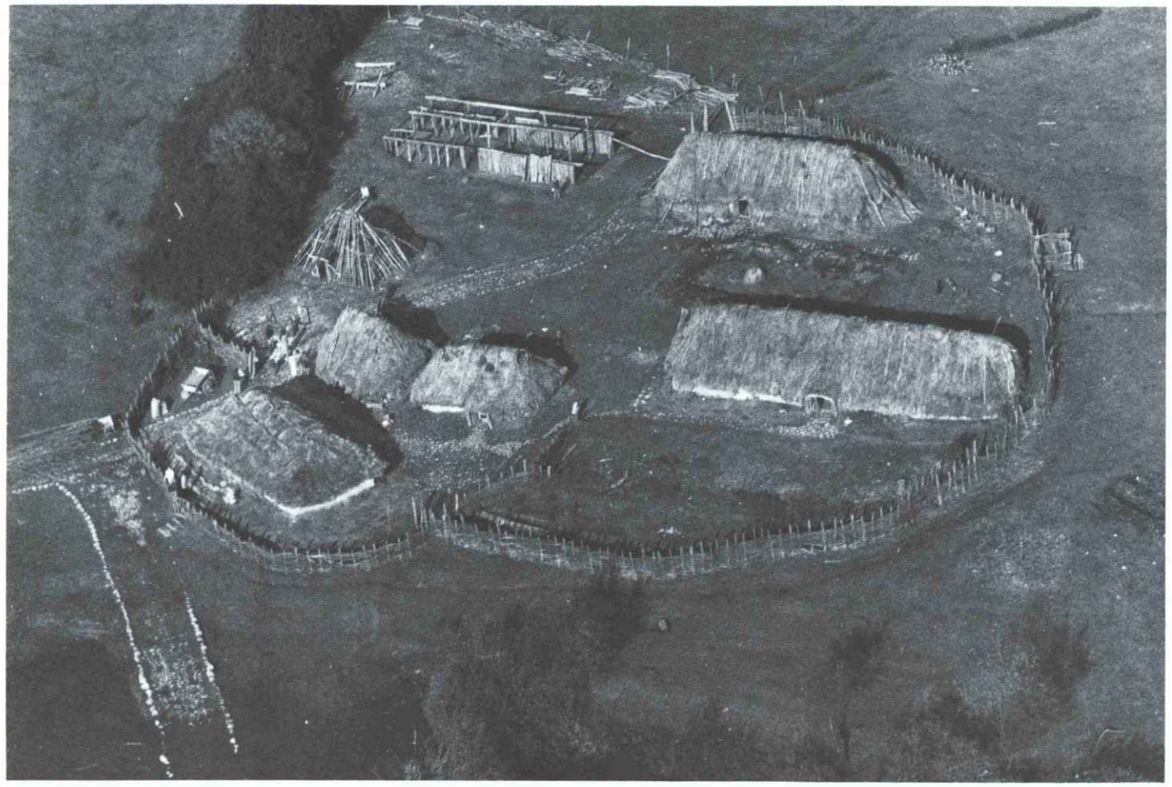
— Modern electronic and substitutional learning medias tend to concentrate on highly specialized subjects. Similarly, teachers are becoming more and more specialized and often have difficulty relating their own subject to others.

— The general lack of basic practical skills in the light of present-day advanced technology.

— The lack of awareness of the year's seasonal cycles and the impact of the seasons on the environment.

— The diminishing experience in crop cultivation without the use of modern machinery.

— The problem of a growing difference between the urban and the rural situation in the sense that although the urban situation is our future, the rural situation is being thought of as the environment.



A "historical workshop", such as the one at Lejre, is a continuing process involving instructors, teachers and students. Its running — whether the ethnological basis is Iron-Age, 19th Century or present-day life in a developed area — is first and foremost dependent on the pedagogical skill and training of the leader and his assistants and his acceptance by a group of students as a friend.

THE LEJRE-CENTRE'S ATTEMPT TO SOLVE SOME OF THESE PROBLEMS

This year the "Historical-Archaeological Research Centre" (instituted in 1964) drew up a 5-year "perspective plan" aimed at deepening the relationship between relevant social problems of the present and near future, and environmental interpretation, and by which it hopes to find solutions to the weaknesses of the ethnological approach to environmental interpretation.

Qualitatively, the ethnological approach depends upon how far the conclusions and interpretations of various scientific disciplines are incorporated into the Centre's work, School Service, Visitor's Service and mass media such as books, audio-visual programmes, and demonstrations for the general public.

Quantitatively, the ethnological approach through "historical workshops" is not just a matter of multiplying the number of "historical workshops" (there are now more than ten large workshops in Denmark).

A "historical workshop" is not a film-show to be rerun over and over again. It is a continuing process involving instructors, teachers and students. One day a number of students from a strictly urban setting will be at work, the next a group of students from a rural area, and so on. The running of a "historical workshop" — whether the ethnological basis is Iron-Age, 19th Century or present-day life in a developed area — is first and foremost dependent on the pedagogical skill and training of the leader and his assistants and his acceptance by a group of students as a friend.

A very large number of primary and secondary school teachers have been trained in pre-industrial technology (a total of approx. 1,200 teachers in history, geology, biology and handicrafts since 1967). This training has already been offered to some degree to international participants and in the future will probably be developed further.

We believe, that most of the problems listed could be solved through the approach of regional ethnology based on "historical workshops" since:

— Personal participation outdates the "TV-syndrome" — events and facts are created and thus experienced by each individual.

— There are direct experiences with basic environmental elements: soils, plants, animals, materials, constructions, tools.

— Large scale mechanization and use of electric and automatic devices

are replaced by a direct "person-tool-material-result" relationship.

— The "historical workshop" site is anything but an industrialized recreational area.
(The Lejre-Centre not being the best example as it functions today with 70,000 visitors each summer).

— The "transmission of energy" and the "capital of knowledge and technology" as studied by "cultural ecology" is experienced by gathering raw material from the vicinity of the workshop.

— Knowledge of the ecology of plants and animals replaces highly specialized knowledge.

— The "historical workshop" encourages the inter-linking of various teaching subjects, such as: history — biology — handicrafts.

— The attained personal insight into a given ethnological problem — e.g. house construction — develops a sound criticism towards the conclusions of the experts. As the Centre trains students in analysing and "reading" landscape or townscape, this criticism also covers the environmental planning by experts.

— Direct practical skills are taught, especially in various handicrafts: weaving, woodwork, metalwork, pottery and so on.

The Centre still stands in an uncertain position concerning the application of the "historical workshop" to a strictly urban setting, and towards urbanism at all. We think that here the future lies in workshops based on subjects as more specialized workmanship (crafts in proto-industrialized towns) and manufacturing and industry (at the turn of the century). We believe that this will bring about environmental interpretation in an urban setting, especially with regard to man-made structures and work-processes not shown in a rural-orientated workshop.

It is our hope that financial support in the future shall help us reach these goals.

THE ETHNOLOGICAL APPROACH — ONE EXAMPLE

In Denmark a system of nature-parks numbering about 30 is planned. How do we interpret these parks?

One of the first to be established is the TYSTRUP-BAVELSE nature park in West-Zealand south of SORØ.

The landscape is varied, being comprised of 1) the river SUSÅ with the two lakes of TYSTRUP and BAVELSE which provide fresh-water fishing, 2) the moraine hills, among other "plateau-hills", the former bottom of glacial "ice-dammed" lakes, now standing free as clay-plateaus well suited for the making of redbricks, for example the LINDEBJERG-complex, and 3) a vast forest district, belonging to a number of estates, covering a large part of the area and used for charcoal-burning not so long ago.

An example is the earlier LORUP SKOV charcoal industry. A working multiscreen show of colourslides on Tystrup Bavelse was shown at the STUDY CONFERENCE.

This area can be interpreted by presenting the following activities: fishing, redbrick-burning and charcoal burning. As an example, we shall present how fishing can be treated in terms of regional ethnology. The basic ethnological objects were — a bow-net for catching the fish, the following fish: the Eel (Anquilla anquilla), the Bream (Abramis brama), the Perch (Perca fluviatilis) and the Pike (Esox lucius). The bow-net, a typical display object in a local museum, and its construction, is subject to local variation and therefore a good example of variations studied by regional ethnology, these variations stemming from adaptation to a local environment and local historical traditions, as well as culture-contact with other regions.

Today one family makes a living from catching the eel from Lake TYSTRUP and selling it to a local restaurant, the FISKERHUSET (the "Fishing-house"). Also to be mentioned are, the LIVING PLACE (house, netmending place, the pier for landing the fish), three BOATS of various sizes, anchored under the green shade of the "KELLERØD" wood at a small pier, and the main EQUIPMENT — a number of fresh-water eel-dams with bow-nets distributed along the lake-coast.

The sites for the construction of the eel-dams are carefully chosen according to the location of the best CATCHING-PLACES. The arrangement and construction of the LIVING PLACE, the BOATS, the EQUIPMENT and the CATCHING PLACES belong to the "capital of technology" and the "capital of knowledge" at the fishermen's disposal. The fish represent a source of energy to the fishermen, and the catching is the "transmission of energy" from nature to society. In such a terminology CULTURAL ECOLOGY as an approach to REGIONAL ETHNOLOGY would describe the activity.

Up to this point the description has been mainly along the lines of museum displays, exhibitions and what would be written in a local guide.

If not especially interested, many young students would have abandoned their interest in the bow-net and the fish long ago! Therefore we introduce a "HISTORICAL WORKSHOP"-situation. The easiest would be to take part in emptying an eel-dam. Better still would be constructing an eel-dam and a bow-net, waiting for a catch, emptying the catching devices and selling the catch at today's prices.

Then a number of questions would immediately arise, most of which are entirely concerned with ECOLOGY:

— what are the names of the various fish we caught,

— their number, origin, feeding and the relative balance of various species,

— which large birds steal the fish from the nets (the Cormorant, Phalacrocorax carbo),

— the names and appearance of plants in the plant-zone along the coast, where the young Bream would feed, or which would be an obstacle to the establishment of the eel-dam, and

— the present state of the water (polluted or not, the present rate of eutrophy).

The knowledge may be obtained through an interview with a fisherman, and/or by consulting experts, books and the results from simpler analysis.

The total information would then be presented as an exhibition or a colour-slide show at the home school.

Later a "feed-back" report could be given to the authorities as well as the fisherman, all in response to the future state of fishing, the lake, and the fauna and flora of the lake. Suggestions on unregulated developments, as well as the need for regulations could be made.

International study conference on the role of regional ethnology in environmental interpretation and education

George EPLER
Environment and Natural Resources Division, Council of Europe

For the second time, the Council of Europe has taken the initiative in organising an International Study Conference in order to assess and to confront current approaches in environmental interpretation and education in Europe. The first Conference, held in 1975 in the Netherlands, critically examined the whole spectrum of practical examples of environmental education, with an emphasis on the biological approach. The aim of the second Conference was to highlight issues raised by the use of regional ethnology as an *approach* in environmental education, to illustrate the potential of imitative experiments and to demonstrate the effectiveness of environmental interpretation as a tool towards stimulating awareness of the general public.

71 experts coming from 14 countries, with widely differing professional backgrounds, assembled on the premises of the Lejre Historical-Archaeological Research Centre, near Roskilde, Denmark. During a full week they went through a series of keynote speeches, site visits, practical work and in-depth discussions. In doing so, they became first bewildered, then motivated and finally succeeded in structuring for themselves the apparent confusion in their minds when confronted with so many new stimuli coming from so many directions. The Conclusions, adopted at the close of this Conference, reflect this search for coherence. How to relate regional ethnology to ecology, and how to translate insight and knowledge gained from studying a coherent community into concepts and attitudes relevant to solving present day environmental issues? Do we know which changes in behaviour we strive at in environmental education and which facilities could be used best in each specific case? I do not wish to assert that these, and many more, questions found a fully satisfactory answer during the Study Conference, but the most important fact was that they were put, thereby serving a most useful purpose. The Lejre Conference has taught us many lessons. Perhaps the most important one is a better understanding of the dimensions of time and space as parameters requiring translation into meaningful concepts in environmental education.

The general framework of environmental interpretation and education now seems well established. The 1977 International Study Conference, to be organised by the Council of Europe in the United Kingdom, will attempt to test this framework when examining the development of environmental education facilities in a strictly urban setting.

CONCLUSIONS

The participants in the International Study Conference on the role of regional ethnology in environmental education and interpretation:

1. agree that for the purposes of environmental education *regional ethnology* may be defined as the comparative study of cultures which explain change and processes of innovation within a limited area of varying size;

2. support the definition that *environmental interpretation* is the art of

explaining the relationship of man and environment to the general public in the field as a prelude to a site visit or discussion meeting;

3. stress that both regional ethnology and ecology should help towards understanding the functioning of a *coherent* community as well as the processes of adaptation to changing environmental conditions;

4. note that the role of workshops in the ethnological context is similar in terms of didactic value to that of first-hand experience with living organisms in the ecological context;

5. recall, however, the need to bear in mind that the greatest educational impact of workshops may lie in fields other than environmental studies;

6. wish to point out that there is an obvious gap to be bridged when attempting to apply the newly acquired insight and knowledge to different economic, political and social conditions;

7. consider that the instruments of environmental education and interpretation, including audio-visual media, may translate this insight and knowledge into concepts and attitudes relevant to present day environmental problem solving;

8. stress that in explaining the historical evolution of production processes, technology, political science and ecology should be used in combination;

9. underline that the educational objectives, i.e. the need to explain the magnitude of changes occurring in time and space, conditions the use to be made of the environmental facilities and not vice versa;

10. stress that in environmental education ample opportunities should be given to discovering for oneself, in order to avoid overburdening by explanations;

11. recall that environmental education facilities should be fully integrated into the educational process in order to produce optimum results;

12. note that the discussions by participants at the Study Conference brought to light the following questions requiring investigation at national and international level:

a) the importance of clearly defining the changes in behaviour aimed at through environmental education in conjunction with consideration of the most appropriate educational facilities to be selected in this context;

b) the specific relevance of workshops in regional ethnology for environmental education.

13. thank the Danish and Scottish authorities, in particular the Lejre Historical-Archaeological Research Centre and the Countryside Commission for Scotland for their contribution towards making this Study Conference a success and express the conviction that this event has contributed towards the next International Study Conference to be organised by the Council of Europe in July 1977 in the United Kingdom, where the theme will be the development of environmental education facilities in a *strictly urban setting.*

NATURE CONSERVATION ON THE URBAN FRINGE: THE ANGLEZARKE EXPERIENCE

John PILKINGTON
Until recently a senior planning assistant with one of the Anglezarke authorities, now with Hampshire County Council, Winchester, England

Conservation of Europe's natural resources is difficult enough even in the deepest rural areas, where concern has now led to efforts such as the 1976 Wetlands Campaign described in *Naturopa No. 24.* How much more difficult, then, is it in those much more intensively used countryside areas which are collectively known as the urban fringe? What priority should be attached to conservation here as opposed to in other possibly more spectacular areas? And what are the problems and techniques? This article describes an attempt to answer these questions in a 230 sq. km. area on the northern fringe of the Greater Manchester conurbation in north-west England.

THE ANGLEZARKE AREA

Anglezarke is unusual for Europe in that in spite of its very close proximity to a large urban population, it still retains a strong sense of remoteness and solitude. This may be attributed partly to its moorland character, with large tongues of high ground approaching in places to within a kilometre of the town centres themselves, and partly to its predominant land use which is as a water gathering ground for some 25 reservoirs. Much of the area has been owned and managed by the water supply authorities for over a century, and this has tended to restrict agricultural activity and public access, and provide an ideal environment for the original natural vegetation cover to survive. Until recently, therefore, Anglezarke's ecological characteristics were entirely untypical of an area surrounded by large industrial towns.

All this had been changing for several years when, in 1975, the local authorities joined forces to prepare the area's first recreational plan.* As early as 1902 a local industrialist and benefactor had opened up a small tract of land alongside one of the larger reservoirs "for the use and enjoyment of the inhabitants of Bolton, and generally of the public for ever", and since that time a steadily increasing stream of people have come daily from the surrounding towns — on foot, on horseback or by cycle, bus or car — to enjoy the tranquillity which the area has to offer. In 1971 accessibility was enormously improved by the construction of a new motorway, and today some 2½ million people live within a half hour's journey by car. Recreational pressures have thus become the area's most serious problem, and the local authorities' plan aims to reconcile the ever-increasing popularity of Anglezarke not only with its ecological value but also with its use for agriculture, forestry and water gathering as well as its inherent visual attraction as an upland landscape.

ECOLOGY IN ANGLEZARKE

The unique value of the area to naturalists lies in the variety of interest it offers both the generalist and the specialist. Not only does it contain excellent examples of many of the region's natural habitat-types in a surprisingly unaltered condition, but it also harbours several rare species.

The dwarf cornel (an alpine plant known at only two other sites in England) may be found here, as may the badger and the greater part of the English breeding population of the "twite" or mountain linnet. Until recently, some of the rarer birds of prey such as the merlin and short-eared owl also favoured the area for breeding, and it is hoped that their disappearance may be only a temporary response to disturbance by visitors.

Anglezarke's interest has been recognised by local naturalists for many years, and the Nature Conservancy Council recently declared it a conservation zone of County-wide importance.

A characteristic grouping of moorland, woodland and water, presenting scope for the integration of land-use.

PROBLEMS OF CONSERVATION

Successful conservation of the area will inevitably depend on a change of attitude on the part of many traditional users:

Recreational visitors, perhaps the greatest single threat to the area's natural environment, present problems of three kinds:

- *the physical pressure of numbers,* leading to trampling of fragile woodland and wetland vegetation, disturbance to birds and animals and in extreme cases even erosion of the more robust grass and moorland vegetation;
- *Deliberate damage* to bird, plant and animal communities by shooting, picking or "bird nesting" (the primrose, once common throughout the area, has now disappeared almost to the point of extinction through picking and uprooting of this conspicuously attractive plant, and there are also occasional reports of badgers being molested and their setts destroyed, despite their comparative rarity);
- *unintentional damage* through visitors' carelessness — the main problems being litter and fire.

Farmers and foresters often have a greater understanding and sympathy for the natural environment, and although farming methods in the past led to the almost complete disappearance of the natural vegetation cover with its associated bird and animal populations, the relative stability of upland farming practices this Century has protected what remains of the variety of vegetation types. (This is in marked contrast to many lowland urban fringe areas where increasing demand for agricultural produce coupled with generally better soils has encouraged an intensification of farming practices and consequent impoverishment of the natural environment.)

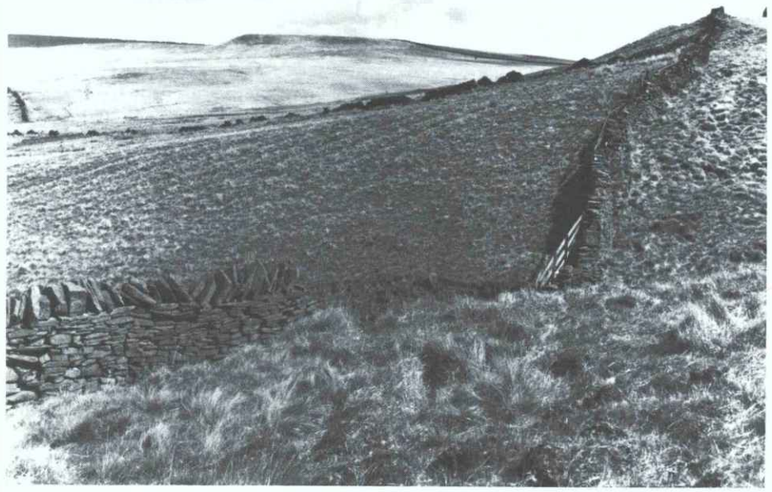
The North West Water Authority which took over responsibility for the reservoirs and their gathering grounds in 1974 is faced with a particular dilemma, for on the one hand it is required by law to consider possible recreational uses to which its vast areas of land and water might be put, yet on the other it must ensure that these are managed in such a way as to avoid compounding the problems already caused by recreational visitors. A certain amount of protection has in the past been afforded by the very lack of public access to many of these areas, and the ecological implications of an over-enthusiastic "opening-up" operation could be very serious indeed.

The local authorities have mostly made good use of their powers to control the spread of development and reduce the level of pollution, but lack of finance has so far prevented them from embarking on major schemes aimed directly at enhancing the natural environment (although they do have a considerable potential role through their other activities — see below).

OBJECTIVES OF THE PLAN

In the light of these problems, the nine authorities preparing the Anglezarke Plan are being recommended to direct its conservation aspects towards three main objectives:

- *to conserve* an adequate and representative series of wildlife habitats and, in exceptional cases, individual species;
- *to resolve conflicts,* wherever possible, between conservation and other land use interests by comprehensive management;
- *to encourage* recreational and educational uses which are specifically orientated towards the natural environment, insofar as this is compatible with Objective 1.



Anglezarke Moor — to what extent is its land-use potential unrealised?

Management of visitors — an established nature trail.

As a first step towards achieving these objectives, a draft plan will shortly be considered by a steering group of members of the nine authorities, and it is anticipated that this will include a seven-point conservation policy along the following lines.

A CONSERVATION POLICY FOR ANGLEZARKE

1. **Nature reserves:** These would be areas managed primarily, but not always exclusively, for nature conservation. In an area like Anglezarke the concept would need to be interpreted flexibly to include both small wildlife sanctuaries which would be inviolate, and larger reserves where conservation objectives would be pursued alongside recreational and educational ones. In the larger reserves careful and selective interpretation would be the most effective way of conserving those natural resources which did not justify "sanctuary" status.

2. **Comprehensive management of large areas:** Although the concept of nature reserves is an important one, the requirements of birds, animals and plants are such that their conservation cannot be accomplished by direct control of isolated areas alone. Birds and animals, in particular, often migrate over fairly great distances and therefore a comprehensive view of land use and management over a wide area is essential if conservation is to achieve more than a series of

"museum-piece" habitats. This policy aims to ensure that the use of land which is not managed primarily with conservation in mind nevertheless remains sympathetic to ecological needs, and this is particularly important when changes of use are being considered, for example the destruction of hedgerows or trees or the carrying out of development or afforestation. Anglezarke is particularly fortunate in that much of its area is in public ownership, but there is no reason why such a policy could not be followed in any area given a commitment on the part of both public authorities and private landowners.

3. **Interpretation and education:** Although nature conservation and intensive recreational use can never be completely compatible, the Anglezarke authorities are aware that the area's immense attraction for recreation cannot be ignored, if only because many thousands visit and enjoy it already and will quite rightly continue to do so, whatever conservation policies are followed. The conflict inherent in this dual role is not as great as many seem, for nature reserves of the larger kind are recreational attractions in their own right and offer considerable opportunities for "getting the message across" to visitors by careful interpretation of selected features (see above), both adding to their enjoyment of the area and at the same time directing their attention away from its more sensitive parts. In Anglezarke interpretation of the natural environment may eventually form part of a much broader interpretation and educational programme embracing social history, industrial archaeology and agriculture, and this would ensure a wide potential audience. Particularly worth mentioning are the authorities' efforts to simulate interest among local schoolchildren, several thousand of whom have already participated in data-collecting projects or contributed in other ways to the preparation of the plan.

4. **Ranger service:** The need for an effective ranger service increases in direct proportion to the popularity of an area if protection of the natural environment is to be maintained, and paid or voluntary wardens are doubly important if interpretation and educational objectives are to be pursued. One of the Anglezarke authorities, Lancashire County Council, has already developed an excellent ranger service in another part of its area, and the North West Water Authority has appointed a warden for its most popular Anglezarke site. Both these authorities have found a wealth of enthusiasm among local inhabitants for both paid and voluntary wardening work, and it is hoped the plan will enable this resource to be tapped in a much more organised and effective way than has been possible in the past.

5. **Other local authority activities:** British local authorities have powers and responsibilities in several fields where conservation of a less spectacular kind might nevertheless provide ecological benefits on the urban fringe. In the reclamation of derelict land, opportunities arise for the creation of new habitats by revegetation using suitable native species. In the construction and improvement of roads, consideration could be given to the possibility of using verges as a "springboard" for the regeneration of ecologically impoverished areas of countryside (seed mixes containing a variety of indigenous herbaceous plant species are already commercially available). Further, conservation of existing roadside vegetation by single-swathe cutting or only where necessary for road safety would not only save scarce financial resources but would also restore ecological diversity to many areas (this is already practised on British motorways, although admittedly for financial rather than ecological reasons). The value of pursuing these policies in Anglezarke is being considered carefully, and first indications are that they may provide a real ecological benefit at little or no cost.

6. **Publicity control:** Many delicate natural features have been protected in the past for no other reason than sheer lack of knowledge of their existence. Where a feature is little visited because it is little known, the Anglezarke authorities will be recommended to publicise it only when an adequate management framework has been created to ensure that it will be able to cope with any likely additional pressures.

7. **Research and monitoring:** Not only would more detailed ecological research show which parts of Anglezarke are most in need of protection, but continual monitoring of the impact of conflicting uses would help to determine the right conservation formula for each particular problem. There is much scope here for voluntary work by private organisations and individuals, and contributions have already been made to the Anglezarke project by the Lancashire Naturalists' Trust and by local schools. Research and monitoring, either by voluntary workers or by the Anglezarke authorities themselves, will thus play an important part in implementing all the conservation policies described above.

WIDER IMPORTANCE OF THE ANGLEZARKE PLAN

Anglezarke is by no means unique in the difficulties it presents to nature's struggle to survive; a study of any urban fringe area in Europe will probably reveal a similar set of problems. However it is a good example of a project where nature conservation is being given an important role in the preparation of a comprehensive land use and management plan, and is of potential interest to all European authorities whose responsibilities include this often neglected part of the urban/rural environment. It is hoped to publish the draft plan for the area in 1977, which will probably be reported in a future issue of *Naturopa*.

The author has asked us to point out that the views expressed are entirely his own, and do not necessarily represent those of any of the authorities preparing the Anglezarke Plan.

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* ANGLEZARKE RECREATION AREA LOCAL PLAN: **Vol. 1: Survey and Issues; Vol. 2: Appendices to the Survey; Vol. 3: Public Participation Report;** all published 1976 by the County Planning Officer, Lancashire County Council, East Cliff County Offices, Preston, England PR1 3EX. (One of the interesting things to emerge from the public participation exercise was that the title Anglezarke, which derives from the name of a local parish, was causing confusion among both residents and visitors. Future publications will therefore refer to the area as the West Pennine Moors.)

Refuge on the path of the "Grande Randonnée" G.R. 20 in the Regional Park of Corsica.

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