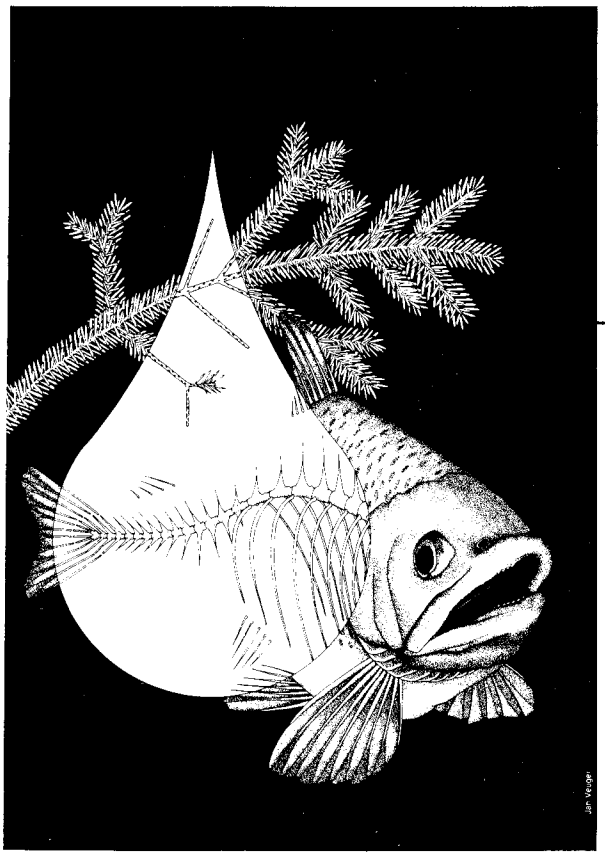
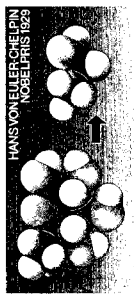
No. 2, March 1984

Acid News

A Newsletter from the Swedish and Norwegian NGO Secretariats on Acid Rain

Send postcards! Mr Olof Palme has not yet sent this postcard, but maybe this front page will inspire him to do so...





SVERIGE 270

Margaret Thatcher
Prime Minister
Cabinet Office
White Hall
GB-LONDON SW 1
Storbritannien

Drawing Jan Veuger

The Swedish Society for the Conservation of Nature
Box 6400, S-113 82 Stockholm, Sweden
Phone 08/15 15 50

To the Rt. Hon. Mrs. Margaret Thatcher, M.P.

Dear Prime Minister,

We in Sweden are experiencing an ever-increasing destruction of our environment:

- The acidification of our lakes and rivers is spreading, causing so-called fishkill and other drastic changes to the water ecology.
- The acidification of our subsoil water—the source of drinking water for around one million Swedes—is corroding water pipelines, and raising the content of potentially toxic metals in our drinking water.
- Serious, and constantly increasing damage to our forests.
- Material damage from corrosion that costs billions per year.

The cause of all these effects is air pollutants, above all sulphur and nitrogen oxides. These are formed mainly in the combustion of coal, oil and petrol.

Several international studies (OECD, EMEP) have demonstrated that approx. 75% of the sulphur fall-out over Sweden stems from other countries, primarily the United Kingdom, the Soviet Union, and East and West Germany.

The alarming situation in which we now find ourselves demands rapid action. We therefore demand that each and every country in Europe should shoulder its international responsibility, and drastically reduce its emissions of sulphur and nitrogen oxides within the near future.

Stop emissions of air pollutants—stop the acidification!

Yours faithfully,

.....Olof Palme.....

Activities create attention!

During **Acid Rain Week, 2 - 8 April**, masses of organisations in a number of countries will be organising activities around the theme of acidification. The "grande finale" will be **Action Day, Saturday 7 April.**

Exploit this joint gathering of forces in your mass media contacts during Acid Rain Week, and point out that this is an unique international action. A mobilisation of opinion that cannot be ignored by the decision-makers concerned.

Let's put a stop to emissions of acidifying air pollutants.
Let's put a stop to Acid Rain!

The Stop Acid Rain Campaign/Norway
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STOP ACID RAIN

STOP ACID RAIN

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Acid News

A newsletter from the Swedish and Norwegian NGO secretariats on acid rain.

ACID NEWS is a newsletter produced jointly by the Swedish and Norwegian secretariats on acid rain. The secretariats' and the newsletter's main task is to provide environmental and nature conservation organisations and others with information on the subject of acid rain and acidification of the environment.

Anyone who is interested in these problems is invited to contact the secretariats on the address below. Any questions or requests for material will be dealt with to the best of our ability.

In order to make Acid News interesting, we are dependent on information on what is happening elsewhere in the world. So if You read or find out about something which might be of general interest, please send a letter or a copy to us.

Address:

The Swedish NGO Secretariat on Acid Rain
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THE SECRETARIATS

The Norwegian secretariat, "The Stop Acid Rain Campaign/Norway", is organized by six non-governmental organisations concerned with the environment:

- Nature and Youth (Natur og Ungdom)
- The Norwegian Forestry Society (Det Norske Skogselskap)
- World Wildlife Fund/Norway (Verdens Villmarksfond)
- The Norwegian Association of Anglers and Hunters (Norges Jeger- og Fiskeforbund)
- The Norwegian Society for Conservation of Nature (Norges Naturvernforbund)
- The Norwegian Mountain Touring Association (Den Norske Turistforening)

Address:

The Stop Acid Rain Campaign/Norway
P.O. Box 8268, Hammersborg
N-OSLO 1 NORWAY

Telephone: 02-42 95 00

"The Swedish NGO Secretariat and Acid Rain" is organized by four nongovernmental organisations concerned with the environment:

- The Environmental Federation (Miljöförbundet)
- The Swedish Angler's National Association (Fritidsfiskarna)
- The Swedish Society for the Conservation of Nature (Svenska Naturskyddsföreningen)
- The Swedish Youth Association for Environmental Studies and Conservation (Fältbiologerna)

Address and telephone: see above!

STOP ACID RAIN

STOP ACID RAIN

ISSN 0281-5087

Acid rain damage costs £33 bn a year

A devastating account of the ravages of air pollution — acid rain — was presented in January to the European Parliament.

The report is packed with examples of deadly **atmospheric corrosion**: one inch of Portland stone eaten away from St Paul's Cathedral, 4,000 biologically dead Swedish lakes, and more than 100 milion pounds of damage to Dutch historical archives.

The report, from the Parliament's Environment Committee, concludes that the already colossal estimates of the cost of acid rain damage, have been underplayed. The OECD had put it at 3 to 5 per cent of European Community Gross National Product, or **between 33 and 44 billion pounds a year.**

But the report points out that the OECD figure took no account of the **damage to forests,** particularly in Germany where five million acres of woodland are affecte and 47,000 jobs have been lost.

Acid rain, the report says, has become one of the greatest environmental problems of our time.

"Acid rain is responsible for damage to nature on a vast scale. Damage which cannot be quantified," it says. "Acid rain also exacts an equally heavy toll in socio-economic terms which cannot be quantified with accuracy and at any event amounts to several percentage points of GNP."

The report points out that little research has been carried out into the long-term damage done to **soil,** or indeed the implications for **human health.**

The committee has called for an **international action programme** to combat the menace, involving heavy spending on industrial filtration and antipollution legislation, including the rapid introduction of lead-free petrol.

The main components of acid rain are oxides of sulphur and nitrogen. Power stations and road traffic are the biggest sources.

In Britain, the report says, power stations account for 61 per cent, of sulphur dioxide emissions, and traffic for 28 per cent of nitrogen-based pollutants. Overall, power stations are said to be the main source of sulphur dioxide in the air, and traffic the main source of nitrogen monoxide and dioxide.

The Parliament wants strict emissions standards to be set, a long-term programme to reduce pollution, and an increased research effort. The report notably avoids apportioning blame to particular countries (Britain is often said to be the main source of industrial pollution), but it does criticise the mass of different laws and standards that apply.

"As legislation created at European Community level prevails over national and regional legislation, EEC legislation would seem to be the best solution," it says. The heavy cost of the clean-up, installing filters and modifying engines, and the consequent added cost of energy could be met in part by a special levy on the producers of acid rain — the "polluters to pay" principle.

The report makes an almost despairing plea that the Community Commission "must" find the cash and staff, whatever the cash crisis in Europe.

"If the Commission cannot firm these staff and resources by increasing the size of the Community Budget, then they must be found by reallocating existing staff and funds," says the report.

Derek Brown

From the Guardian 1984-01-20

International Acid Rain Week: Tips on Activities

Photo: Thomas Maronn

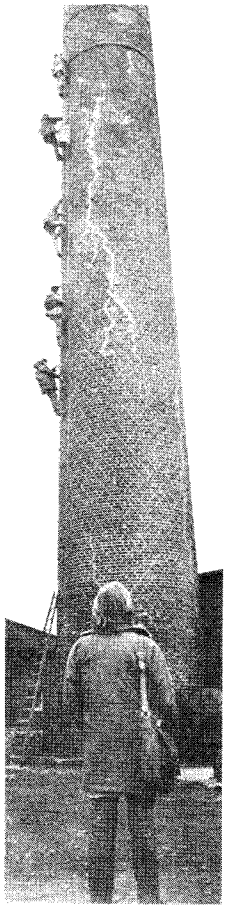

Photo: Christer Ågren

Collaborate!

— Start up "Stop Acid Rain" working groups, whenever possible in collaboration with other organisations.

Gather facts and acquire know-how

— Collect and **study** the information material available.
— Invite people with a knowledge of the subject to give **lectures** at your meetings.
— Carry out yuor own **investigations**:
  ★ Inventories of lichenes (which indicate the quality of the air)
  ★ Inventories of the damage caused to forests
  ★ Investigations of lakes
  ★ Tests on the drinking water
— Put together the available facts, lists of information material, tips on activities etc., to **make a "Guide to Activities"**.

Create opinion

Present the results of your studies and investigations to the general public, e.g. in the form of an **exhibition** or newspaper **articles.**

— **Arrange excursions** for politicians, officials, and the general public to areas that have been hit: demonstrate the effects, and present your proposals for action.
— Call on **local politicians**, and put forward your demands.
— Arrange **lectures**, and show slides and films, for the **general public.**
— Organise **hearings** of politicians and decision-makers, **panel debates**, and similar arrangements for the general public.
— Write **letters** and send **articles** to the newspapers.
— Work out an **alternative energy plan** for your local authority.
— Draft a **local "sulphur budget"**. By charting your local authority's emissions of sulphur dioxide and comparing them with the fall-out, you can see whether it is a net exporter or importer of sulphur pollutants.

This will also give you information on who is responsible for the major emissions — which will show you on whom pressure has to be brought to reduce the emissions.
— Arrange a **"tips on pollution" walk**, a nature trail, for the general public. Put questions on the subject of acidification and air pollution.
— Act publicly!
  ★ **Disseminate information** at public places
  ★ **Disseminate picture postcards** with preprinted addresses to the governments both of your own country and the countries causing most pollution in your own country.
  ★ **Plant a dead forest** in the middle of town, and spread information to the passers-by.
  ★ **Protect** trees, statues, buildings etc. from air pollution, by covering them with protective fabric. Be careful to explain just what you are doing, and why.

In the back issues of Acid News you will find further tips in the descriptions presented of actions in a variety of countries. Good luck!

Christer Ågren

Great Britain: Government Acid Rain Study

Some parts of Britain have levels of acid rain as high as Scandinavia and North America, according to a Government report, **"Acid Deposition in the United Kingdom"**, published in January. The report, by the Warren Spring Laboratory at the request of the Department of the Environment, confirms that acid rain is causing serious pollution in Britain. But the Government has decided that more research is necessary before any action is taken — a view which is supported by the report.

The report was directly attacked by **Friends of the Earth**, who believe that the official Warren Spring Laboratory's study of acid rain, published 9th of January, demonstrates the need for Environment Minister William Waldegrave to cut Britain's sulphur dioxide pollution by forcing the CEGB to institute a pollution reduction programme on power stations. The report has major shortcomings but shows acid rain to be widespread across Britain, and that Britain is a major exporter of sulphur pollution. FoE Campaigner Chris Rose comments: *"The report is a masterpiece of equivocation but behind the scientific smokescreen there are some harsh and very worrying facts."*

The report shows:

1) Britain's rain is acid-polluted. Between 1978 and 1980 mean annual acidities at 38 of the cleaner sites in Britain **all** recorded rainfall (94 data) more acid than pH 5.6 (normal natural value) **and** more acid than pH 5 (below which the report acknowledges man-made pollution is almost certain) and 82% were more acid than pH 4.5, the lowest possible theoretical value caused by natural processes.
2) Britain's rain is commonly 100-150 times more acid than natural rain, and in 1 case (at Bush, Scotland) more than 600 times more acidic than normal.
3) Although the Report fails to make the calculation, data for the UK Sulphur Budget shows that Britain 'exports' 76% of all sulphur emitted here.
4) The Report shows that sulphur accounts for 70% of the acidity in British rainfall (the other 30% being due to nitrate).
5) The report shows that other countries account for only 11% of all acidity in British rainfall (80% home sources, 9% 'other').
6) The report shows that acidity comes in short bursts, for example 30% of the acidity in rain falling at Goonhilly in Cheshire in 1980, fell in just 5 days (2.7% of all wet days) with 50% falling in just 10 days.
   This is ecologically very serious as biological systems suffer most from such 'episodes'.
7) The report acknowledges that urban areas may suffer significantly higher acidities (although it excludes urban sites and those near to industry from its data base), giving as examples Glasgow 41%, Nottingham 20% and Norwich 94% in excess.
8) The report shows that dry deposition of sulphur which is difficult to measure because it enters (and damages) plants as fine gas or particles, reaches high levels in parts of Britain (especially S, E and Central England) — up to 3x wet acidity. This may acidify wetlands (eg New Forest pools, bogs) and damage crops.
9) Historically the report shows:
   - rain in rural Britain was ca. pH 5.1 (0.5+−) in 1870 (when sulphur emissions were 20-25% of today's).
   - from 1930-56 4.7, 1956-70 4.1-2, 1970-77 4-4.1 (Hert's. sites)
   - Loch Katrine pH 5.2 (1944-46) fell to pH 4.6 by 1976 (L. Katrine is near Glasgow)
   - at Eskdalemuir data collected by the European Air Chemistry Network shows a reduction of pH 4.5 to 4.3 and at Lerwick from pH 4.3-2 to 4.1-2 between 1958-67 and 1975-79
   - the same network (EACN) found statistically significant declines in pH (increased aci-

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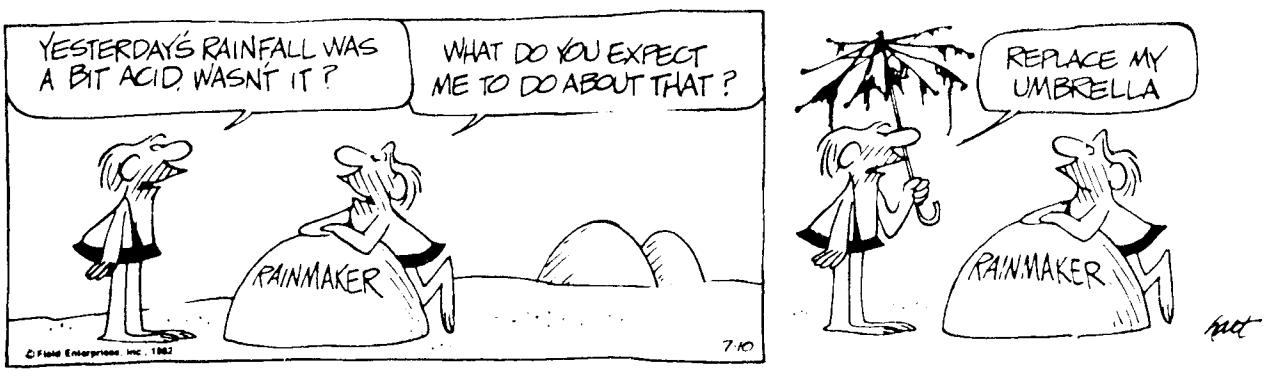


Acid rain cuts crop yields

Photo: Christer Ågren

Acid rain is cutting crop yields by as much as 10 percent in some areas, according to Dr Michael Unsworth of the Institute of Terrestrial Ecology.

"I estimate that sulphur pollution is costing UK farmers 200 million pounds a year in crop losses," said Dr Unsworth.

Dr Unsworth has been responsible for co-ordinating a series of Ministry of Agriculture funded trials on the effects of sulphur pollution on winter wheat and winter barley at Sutton Bonnington College of Agriculture. Work on the subject is also going on near Lancaster and Glasgow.

Low concentrations dangerous

"Even comparatively low concentrations of sulphur dioxide have been found to interfere with photosynthesis," Dr Unsworth said, and as a result "both growth and yield are affected."

It has also been found that sulphur dioxide can increase the susceptibility of crops to frost damage as well as to both disease and pest attack.

5-10% yield losses

"Yield losses are likely to be between 5 and 10 per cent in the worst hit areas. If they had been any higher than this we would have picked them up before now. The problem is that the effects of sulphur pollution are generally sub-clinical and produce no obvious symptoms," said Dr Unsworth.

The Ministry of Agriculture's chief pollution scientist, Dr Dennis Hardwick is sceptical.

"We are looking for hard evidence of significant crop losses due to sulphur pollution and have yet to find any," he said.

From Farmers Weekly 1984-01-13

→ dity) at 29 sites in this period, compared with only 5 increases (UK sites)

10) The report attributes declining sulphur emission since 1970 to reduced 'industrial activity'. Comparison with the DoE's Warren Spring Lab. **Industrial Air Pollution** report for 1981 (IAP 7) shows the power station fraction to be growing in this period cf other industries (such sources now = 60% of total emission)

11) The report concludes that for the UK in recent years evidence shows **"increasing acidity"** of rainfall, and for Europe "there are a number of positive trends which, though individually not statistically significant, give an impression of **an underlying upward trend**" in acidity.

FRIENDS OF THE EARTH NOTE AND CONCLUDE:

1) The report's guarded tone and failure to fully analyse some key data it includes can be attributed to the fact that it was in large part written by CEGB scientists. Nevertheless it clearly details large scale acid rain pollution in Britain, and implies heavy pollution export

2) It completely fails to examine **effects** here or abroad (poor terms of reference)

3) It fails to include high urban pollution data, or high acid rainfall areas on mountains and hills — failing recognized by the author's Preliminary Rep. 1982

4) It only gives **mean** values which understate the problem severely

5) It fails to consider ecologically and geologically vulnerable areas (eg Galloway with low-buffering-capacity soils and high wet acidity, and Charnwood Forest /Leics/ and New Forest with high dry deposition and low buffering soils)

6) It fails to pinpoint large emitters

7) It recommends more research when action is required.

Friends of the Earth
377 City Road
London EC1
Great Britain

Acidification threatens

Acidification, a pollution problem associated mainly with Northern Europe and North America, could menace areas near industrial centres in the southern hemisphere, too. A round-robin enquiry by **the International Union for Conservation of Nature and Natural Resources**, has revealed that acidification of soil has already been recorded at danger levels in some areas of Brazil and air pollution of a kind likely to cause acidification is rife in the Eastern Transvaal Highveld of South Africa. Elsewhere, careful monitoring is in progress to detect signs of the problem well in advance. Australia and Thailand, for example, are both potential victims of their own industrial fallout yet both are determined to be forewarned and forearmed.

General effects

The main active ingredients of acid precipitation are dissolved oxides of sulphur and nitrogen, waste products of fossil fuel burning and certain industrial refining processes. In Europe and North America, acid rain has already killed or damaged billions of forest trees and turned hundreds of lakes and rivers too sour to support fish and most other forms of life. The macerating action of acid groundwater can chase aluminium, cadmium and other poisonous elements into the environment which normally have stayed bound in the soil in quite harmless chemical combinations. Acid rain can also cause breakdown reactions in stone and brickwork, eating away the distinguishing features of statues and monuments.

Causes

The causes of acid rain are still debated in countries which have suffered few of these appalling effects: elsewhere, the industrial connection is plainly admitted. The Federal Republic of Germany, which may have lost anything up to half its forest cover as a result of acidification, is taking urgent steps to curb emissions of airborne wastes from coal or oil-burning power stations, factories, refineries, domestic furnaces, traffic and other possible sources.

South Africa

Acid rain is not the only potential medium of acidification: there are such things as acid snow, acid fog (smog) and — not least — acid soot, the direct, dry fallout from smokestacks and exhausts. Just add water, and these wastes become instant acid brews. This is potentially the most serious acidification problem in **South Africa**: enormous oil-from-coal refineries, coal-burning power stations and other industrial complexes clustered round Johannesburg and Witwatersrand are the source and the countryside of the Eastern Transvaal Highveld is in line to be the target. Most of the pollution occurs during South Africa's dry (winter) season, when atmospheric conditions are very stable. The airborne sulphur and nitrogen oxides remain in one place for some time and some are inevitably deposited on the veld. They harm vegetation directly or react with water to form sulphuric and other acids. Though high, the levels of airborne sulphur dioxide, sulphates and nitrates in the area are still well within official air quality limits set, for instance, in California. The planned expansion of coal-burning power station operations in the region means, however, that by 1985, about 2.25 thousand tonnes of sulphur dioxide a day will be released into the atmosphere over the Eastern Transvaal: 80% of these emissions will stay within an area of about 3000 square kilometres, a potential fallout of 221 tonnes per square kilometre per year from power stations alone. The equivalent figure for the Ruhr basin in Germany, a notorious source of acid rain pollution, is 260 t/km^2/year from all sources. Though no hard data are yet available about the effect on the pH of rainwater, groundwater, rivers and other waters, these levels of pollution are almost bound to set the Eastern Transvaal at grave risk of acidification in the near future, if the process has not already begun. Work is in hand to set up a chain of automated sampling stations to measure rainwater pH (counter-acidity score) and dry deposition in the Eastern Transvaal and adjacent areas. These are being established by the Council for Industrial and Scientific Research, which also plans a five-year study to relate pollution to the climatology of the area. Other monitoring sites have been established at Cape Point and in the Kruger National Park. These sites form part of a Global Precipitation Chemistry Monitoring Network, presently being organised from the University of Virginia, USA.

Australia

In Australia, acid rain is not considered a problem at present but the Commonwealth Government is taking no chances and is establishing six rainwater pH monitoring stations around the country in areas where air pollution might be expected to result in acidification: three of these stations should be operational by the end of 1983. The Department of Home Affairs and Environment has several projects in hand to find out exactly what

Southern Hemisphere

Photo: Christer Ågren

the status quo of acidification in Australia might be. Only one area, near Sidney, has so far yielded serious signs of acidification but the low rainfall pH found there is considered a very local effect.

Brazil

In Brazil, strong evidence of acidification exists in the low pH values of soil sampled in the eastern part of Sao Paulo State, but it has not yet been firmly established whether the origin is industrial or not. The lowest pH values (a vinegary 3.7 - 4.7 compared with a state norm of about 5 - 7) were found in Cubatao and Sao Jose dos Campos, both within an hour's drive of the capital and its seaport Santos, where air pollution is an old and self-evident problem.

Thailand

In Thailand where air pollution is equally self-evident in many urban areas, no reliable data are yet available, but the Office of the National Environment Board has begun an air pollution research programme, which includes modelling to take account of meteorological conditions. They point out that the research techniques and models used for air pollution studies in the USA or Europe do not fit the case in tropical continents, where violent rainstorms and strong land-sea interactions characterise the weather. Pollution is far more likely to be diluted and harmlessly dispersed by these kinds of weather than by the 'closed-circuit' continental effects and large, slow-moving, high-pressure systems which dominate climates in the northern hemisphere. Another, more obvious, reason why acidification is unlikely ever to become such a menace in the southern as in the northern hemisphere is the small scale of industrialisation in most of the tropical South.

Accumulative processes

Nevertheless, the problem exists and can only get worse unless the lessons the North has learned the hard way can be applied in the South to help throttle the phenomenon in its cradle. It takes some time before acidification accumulates enough to break down the natural buffer effect of soil and stream. Only when it is virtually too late does the problem abruptly manifest itself in low pH readings in the field and in biological damage. Tree ring and pollen deposit data have shown that in Northern Europe, for instance, the acidification process has been at work since industry itself began and that it has been working an ever more harmful effect on the environment all along.

Information needed

IUCN's Commission on Ecology, meeting in Peru this year, resolved to establish a task force to study the problem of acidification worldwide. Any fresh information about acidification in the southern hemisphere will be gratefully received by the Commission's Executive Officer at IUCN headquarters, who can also provide details of the many IUCN member organisations in Northern Europe and North America who are already very active in tackling the acid rain problem and are combining their efforts in regional networks and coalitions.

IUCN
Avenue du Mont-Blanc
CH-1196 Gland
Switzerland

Ministerial meeting in Munich 24-27 June

The West German Chancellor Helmut Kohl has taken the initiative for an **international conference on environment protection** in Munich, 24-27 June 1984.

Kohl has invited all the European countries, both Eastern and Western, together with Canada and the USA, and they have all accepted. The target for the conference is primarily to bring about measures that will put a stop to "forest death".

A memorandum circulated prior to the conference includes the following passage:

The Federal Government is concerned about the adverse effects of environmental pollution which are in increasing evidence throughout Europe. These effects have made themselves felt most especially on forests, water and buildings. In the Federal Republic of Germany this phenomenon has been most clearly visible in the form of widespread damage to forests. An initial damage report in 1982 found that some eight per cent of forest stocks in the Federal Republic of Germany were damaged in some way. A survey conducted this year in the Federal Republic of Germany with improved methods indicated an alarming increase in damage to about 35 per cent of the entire forest area. Even if the dry summer of 1983 in Western Europe and the improved surveying methods could be expected to lead to some degree of increase in reported damage, a dramatic rise in damage to forests within the Federal Republic of Germany has nevertheless taken place in the course of only one year.

Similar observations of widespread damage to forests are being reported with increasing frequency from other States. So far the hardest-hit countries have been those of Central and Eastern Europe.

Air pollutants

Despite the present lack of scientific evidence, experts consider that there are indications that air pollutants (e.g. sulphur dioxide, nitrogen oxides, photo-oxidants) play a crucial role in the evolution and extent of the damage — each in isolation or combined with other air pollutants and/or other influencing factors (climate, geographical position, pests, silvicultural factors).

In addition, there are alarming reports on damage to water caused by air pollutants.

Air pollutants are also blamed for damage to buildings and works of art.

International co-operation

There is no doubt that the only practical way to eliminate many of the effects of air pollution is through international co-operation. The present endeavours in this direction are fully acknowledged and supported by the Federal Government.

It is the view of the Federal Government that the growing damage caused by air pollution merits the most serious political attention. The work of international organisations involved in air pollution problems requires full political support and rigorous encouragement.

The Federal Government intends to invite the signatories of the Geneva Convention on Long-Range Transboundary Air Pollution as well as international governmental organisations to a ministerial conference to be held in Munich in the early summer of 1984.

Conference topics

The Federal Government proposes the following topics for the conference:

(a) Exchange of views and experiences of damage by air pollutants to forests and water and on findings regarding the extent to which factors other than air pollution contribute to such damage. The purpose of this exchange of views and experiences should be to identify the degree to which further international activities aimed at controlling the sources of damage should be developed.

(b) Exchange of experiences on implementation of measures designed to combat air pollution at its source using present-day technology as well as on measures to reduce effectively overall emission levels. Such an exchange could seek to achieve a breakthrough towards political acceptance for the principles of plant-by-plant emission limits and an effective general reduction of emissions.

(c) Reciprocal information on new research findings pertaining to the damage to forests and water.

(d) A review of the progress made in implementing the Convention on Long-Range Transboundary Air Pollution with a view to providing the additional political stimulus needed for the Convention to be fully implemented. The planned conference is not intended to replace the work of the executive body pursuant to the Convention, but to lend it additional political impetus. Great importance attaches to the activities of this body under the chairmanship of Mr. V.G. Sokolovsky (USSR); the planned conference will promote the work being undertaken within the scope of the ECE Convention.

Forest death also in France?

The extent of damage to the forests in West Germany has been well documented since the autumn of 1983 — some 35% of the country's total forest area demonstrates clear damage. With a fair degree of unanimity, the experts designate long-range air pollutants as the main cause of the damage.

In light of which it is surprising that no damage has as yet been officially reported from France: on the contrary, when *Professor Reichelt* (Donaueschingen) observed in 1983 that the forest damages was in his view clearly evident also in the Vosges, this was brusquely repudiated by French spokesmen.

Photo: Christer Ågren

Evidence of damage

In the most recent issue of the specialised periodical LANDSCHAFT + STADT (Vol. 15, 1983) Professor Reichelt now claims that clear evidence of damage to the forests is to be seen in an almost unbroken profile from Brittany in the west to the Vosges in the east, and also ine central France, towards the middle and east (the Massif Centrale, Lyonnais, Alpes de Savoie), and, finally, even in the Pyrenées. The symptoms appear on the whole to be the same as in West Germany, Switzerland, and Austria. According to Reichelt, both softwood and hardwood ares have been affected, and he judges the damage over wide areas to be critical. His information is based on a sort of line assessment through the regions mentioned, performed during the period April-August 1983.

Further inventories needed

The random sample method applied by Reichelt can make no claim to affording any representative picture. However, his information does emphasise the crying need for a general and statistically reliable inventory of the situation also in France.

Dietrich Soyez

Austria:

The fight against air pollution and forest death!

In Austria, it was estimated at the end of 1983 that forest damage caused by air pollution had hit forests over an aggregate surface of approx. 4,000 sq.km. This is around 11% of Austria's total forest area of approx. 37,450 square km.

At the beginning of February an important meeting was held in Salzburg, at which some 40 organisations were represented. Among other things, the meeting drafted and adopted a resolution which presented detailed demands concerning measures to restrict emissions. This resolution was actively spread to the mass media, the general public, and responsible politicians.

There has also existed for some time now in Austria a working group made up of several environment organisations, and constituted specifically to work on questions of this type.

For further information contact:
Aktionseinheit "Stoppt den Sauren Regen"
Österreichische Hochschüleschaft
— Alternativreferat
Lichtensteinstrasse 13
A-1090 Vienna
Austria

Denmark:

30% reduction in sulphur emissions proposed!

Denmark's emissions of sulphur dioxide are to be reduced by 30%, from 440,000 tonnes in 1980 to 300,000 tonnes in 1995. This, at least, is the proposal made in recently published official report from a specially appointed **Commission on Acidification** to Environment Secretary Christian Christensen.

Low sulphur fuel

By the terms of the Commission's proposals, the reduction in emissions will be achieved by reducing, as from 1 January 1986, the sulphur content of heavy fuel oils from 2.5% to 1.5%, and that of light fuel oils from 0.5% to 0.3%. This will effectively reduce emissions from local heating plants, private household heating units, and diesel vehicles, which today account for something over half of Denmark's total sulphur emissions.

Flue gas desulphurisation

The power stations, which account for the bulk of the remaining emissions, are also to reduce their emissions, among other things by flue gas desulphurisation (FGD). The first FGD unit can be ready for operation by around 1990, and several further units are to be built during the 90s. The Commission further suggests that the power stations should as far as possible purchase and use coal with a low sulphur content.

The Commission's proposals, which have been drafted during the past year, are presented in a 200-page report, and a further 13 background reports are to be published during the next few months.

International problem

The report notes that some 75% of Denmark's aggregate sulphur emissions is exported, which is to say that they are transported on the winds away from the country, and subsequently affect the environment in neighbouring countries. This is of the greatest importance for acidification-sensitive areas in Sweden and Norway, where Danish emissions account for up to 20-30% of the total sulphur fall-out.

The costs of action

The aggregate cost of a 30% reduction in sulphur emissions, in accordance with the above proposals, is estimated at DKR 3-4 billion over the period 1986-1995.

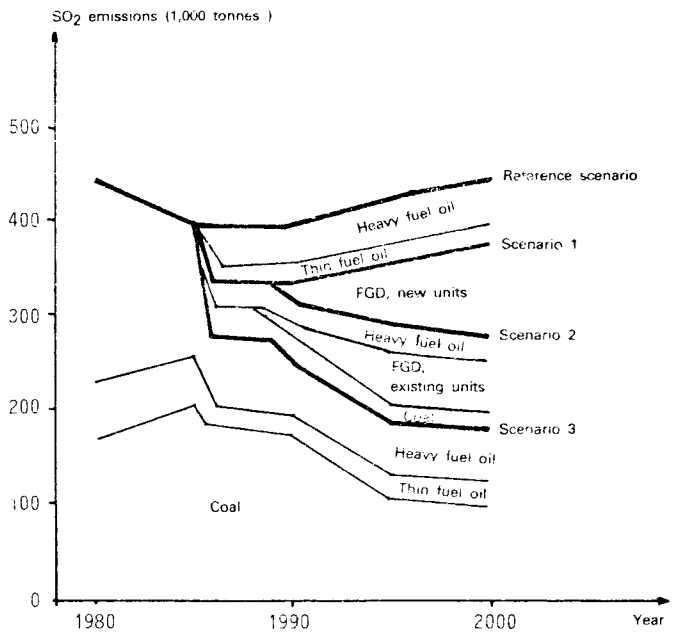
It is further estimated that the measures required will lead to an increase in the price of electricity of DKR 0.013/kWh in 1995. For a family consuming a normal amount of electricity this will correspond to an extra cost of around DKR 50 per year.

The possibility of a more radical reduction in emissions, by 56% by 1995, was also investigated, and this would cost around DKR 15 billion.

The Commission did not undertake any corresponding aggregate calculation of the gains consequent upon reduced emissions, for example in the form of better health, leading to reduce costs for medical care and increased productivity, reduced damage from corrosion etc. etc.

Christer Ågren

Emissions of sulphur dioxide in Denmark 1980-2000



Forest Death also in Denmark?

On the Danish West Coast are to be found today some 1,000 hectares of forest that is wilted, dessicated, and dead. It is mainly the softwood stands on thin, lime-poor soils that have been affected.

A report from the Danish College of Technology shows that an area of 97 hectares of forestland, consisting mainly of Pinus contorta, is now completely dead. Examination of the soil reveals high concentrations of aluminium (7-10 mg per litre) and practically no calcium. It is therefore strongly suspected that the trees have died from aluminium poisoning of their roots.

Intensified research is now to be devoted to the areas affected.

Norwegian proposal for the EEC Convention:

A 50% reduction in sulphur emissions!

The Norwegian Government will now be attempting to achieve international agreement to the effect that sulphur dioxide emissions will be reduced by 50% by 1993. This according to a statement by the Norwegian Environment Secretary Rakel Surlien.

Norway is to present its new proposal at a ministerial meeting in Ottawa, Canada, at the end of March. Sweden, too, will probably lend this proposal its backing. As is well-known, West Germany has already clearly declared that it's target, too, is to reduce sulphur emissions by half.

In its work on restricting Norway's own emissions in accordance with the new target, the Departement for the Environment will be proposing tougher rules on sulphur concentrations in heating oil. It will be forbidden in the future to use oil with a sulphur concentration in excess of 1%, in either new or old oil heating units.

A further proposal has been the introduction of catalytic exhaust cleaning on all new motor vehicles, as from 1988. This proposal is drafted on the lines of legislation in Japan and the USA, where rules of this kind have been in force for several years. If this proposal is adopted, it will involve an extra annual cost of around NOK 500 million. The environment authorities believe, even so, that the extra expenditure on more environment-positive vehicles will be more than offset by reduced expenditures on medical care, and increased productivity, as the result of better health in the population at large.

Trygve Aas Olsen

OOA, Denmark:

A completely irrational choice!

Twelve new coal-fired power stations, or eight new nuclear power stations? This the Danish authorities are now presenting as the choice they face when considering the country's future energy supply. According to OOA, the threat of more coal-fired power stations, with the resulting increased emissions of air pollutants, is being used in order to threaten the the general public into accepting nuclear power.

OOA (Organisationen til Oplysning om Atomkraft, the "Organisation for Information on Nuclear Power") has been working for several years in an attempt to stop nuclear power. In a recently published Alternative Energy Plan it demonstrates that there is a **third** possibility, namely that Denmark can cope without nuclear power **and** still reduce the country's dependence on coal. OOA therefore considers that the planned construction of new coal-fired power stations should be stopped.

By investing in low-energy technology, and thus in a considerably more efficient way of using energy, Denmark can halve its energy consumption over the coming 20 years — and at the same time raise its standard of living.

And by reducing imports of fuel (primarily coal), the country will also radically improve its balance of payments. If adopted, the Alternative Energy Plan would also create a large number of new job opportunities in Denmark.

For further information, contact: OOA
Ryesgade 19
DK-2200 Copenhagen N
Denmark

List of materials

English

(Mainly European material — For North American material we refer to The Acid Rain Resources Directory, see below.)

BOOKS AND PAMPHLETS

"Acidification Today and Tomorrow" (1982)
By the Swedish Ministry of Agriculture. 230 pages. Price: Approximately 3 pounds (including postage). Order from: SNV, Dept. of Information, Box 1302, S-171 25 Solna, Sweden.

"Acid Rain — A review of the phenomenon in the EEC & Europe" (1983)
By Environmental Resources Ltd. 159 pages. Price: 14.50 pounds incl. post. Order from: Graham Trotman Ltd., 66 Wilton Road, GB-London SW1V 1DE.

"Acid Rain — The politics of pollution" (1983)
By Acid Rain Information Group/Nigel Dudley. 16 pages. Order free of charge (+ SAE) from: ARIG, c/o E.R.R., 258 Pentonville Road, GB-London N1.

"Acidification — A boundless threat to our environment" (1983)
By the Swedish Ministry of Agriculture. 40 pages. Free of charge from: SNV, Dept. of Information, Box 1302, S-171 25 Solna, Sweden.

"The costs and benefits of sulphur oxide control" (1981)
By OECD. 165 pages. Order from: OECD, Publication Office, 2 rue André-Pascal, F-75775 Paris Cedex 16, France.

"The OECD programme on long range transport of air pollutants" (1979)
By OECD. Order from the same address at above.

"Ecological Effects of Acid Deposition" (1983)
340 pages. Report and background papers 1982 Stockholm Conference on the Acidification of the Environment: Expert Meeting 1. (SNV PM 1636)
and
"Strategies and Methods to Control Emissions of Sulphur and Nitrogen Oxides" (1983)
192 pages. Report and background papers 1982 Stockholm Conference on the Acidification of the Environment: Expert Meeting 2. (SNV PM 1637).
Price for both approximately 6 pounds incl. post. Order from: SNV, Dept. of Information, Box 1302, S-171 25 Solna, Sweden.

"Acid Rain in Europe and North America — National responses to an international problem" (1983)
By G.S. Wetstone and A. Rosencranz. 244 pages. US dollars 16.50. Order from: Environmental Law Institute, 1346 Connecticut Avenue NW, Washington, DC 20036, U.S.A.

"Acidification of the environment, including Acid Rain" (1983)
By Russel and Roy Owens. 35 pages. Price: 1.35 pounds incl. post. Order from: Pyramid Publications Ltd., 79A Huntbach Street, Hanley, Stoke on Trent, GB-Staffs ST1 2BX

"Acid Deposition in the United Kingdom" (1983)
By and from: Warren Spring Laboratory — Dept. of Trade and Industry, Gunnels Wood Road, Stevenage, Herts, SG1 2BX.

"Scandinavia has a Secret that Concerns You!" (1983)
Colour-leaflet. Free of charge from: SNV, Dept. of Information, Box 1302, S-171 25 Solna, Sweden.

"Acid Precipitation — Effects on Forests and Fish" (1980)
Final report from the Norwegian SNSF research project 1972-80.
and
"Ecological Impact of Acid Precipitation" (1980)
Proceedings of International Conference. 383 pages. Ed: Drabløs and Tollan. Both can be ordered from: Norwegian Institute for Water Research, PO Box 333, Blindern, N-Oslo 3, Norway.

FILMS

"Acid Rain — Who Cares" (1983)
29 minutes, full colour 16 mm film, optical sound (or as VHS video-cassette). By and from: The National Swedish Environment Protection Board, Box 1302, S-171 25 Solna, Sweden.

"Another Silent Spring" (1982)
50 minutes, full colour 16 mm film, optical sound. By and from: Scandinature Production, Bo Landin & Hans Östbom, Finnbackagatan 2, S-654 69 Karlstad, Sweden.

"Acid Rain — Requiem or Recovery" (1981)
27 minutes, full colour
and
"Acid Rain from Heaven" (1981)
30 minutes, full colour. Both are available from: The National Film Board of Canada, 1 Grosvenor Square, GB-London WX 0AB.

"A Killing Rain" (1982)
50 minutes, full colour. By and from: BBC Enterprises Ltd., Villiers House, Ealing Broadway, GB-London W5.

SLIDE SHOWS

"Acid Rain — The Silent Crisis" (1984)
A slide-pack produced by WWF/IUCN Education Project. Price: 7.95 pounds (+ postage). Available from: Conservation Education Services, WWF/IUCN Education Project, Greenfield House, Guiting Power, Cheltenham, GB-Glos GL4 5TZ.

"Acidification" (1982)
A Swedish slide show produced by two Swedish environmental organisations, with a text-book in English. 36 slides. Can be borrowed from: The Swedish NGO Secretariat on Acid Rain, Box 6400, S-113 82 Stockholm, Sweden.

STICKERS & BADGES

Text: Stop Acid Rain. Can be ordered free of charge from: SNV, Dept. of Information, Box 1302, S-171 25 Solna, Sweden.

POSTER NOAH'S ARK

"Stop Acid Rain" (1983). Free of charge from: The Swedish NGO Secretariat on Acid Rain, Box 6400, S-113 82 Stockholm, Sweden.

ACID RAIN CAMPAIGN PACK

Available from Young Liberals Ecology Group, Whitehall Place, Westminster, GB-London SW1A 2HE at the cost of 2 pounds (incl. post.).

READING RESOURCE LIST

Prepared by Council For Environmental Education. Available from: CEE, School of Education, Reading University, London Road, GB-Reading RG1 5AQ. Send SAE + 20 p.

List of organisations involved in the Acid Rain Campaign, available from ARCH (Acid Rain Clearing House), c/o Friends of the Earth (Scotland), 53 George IV Bridge, Edinburgh EH1 1EJ, Scotland.

Friends of the Earth's **ACID RAIN CAMPAIGN GUIDE,** available from FoE Ltd., 377 City Road, GB-London EC1V 1NA (send SAE).

ACID RAIN RESOURCES DIRECTORY

Available from: The Acid Rain Foundation Inc., 1630 Blackhawk Hills, St. Paul, Minnesota 55122, U.S.A. Price: 6 US dollars, including postage.

German

BOOKS AND PAMPHLETS

"Das Waldsterben - Ursachen, Folgen, Gegenmassnahmen" (1983)
Published by Arbeitskreis Chemische Industrie und Katalyse Umweltgruppe Köln. 366 pages. 25 DM plus postage (30% discount for environment organisations). Order from: Verlag Kölner Volksblatt, Palmstrasse 17, D-5000 Köln 1.

"So stirbt der Wald - Schadbilder und Krankheitsverlauf" (1983)
Schütt et al. 96 pages. Approximately 10 DM plus postage. Order from: BLV Verlagsgesellschaft, Postfach 400320, D-8000 München 40.

"Was Sie schon immer über Luftreinhaltung wissen wollen" (1983)
168 pages. Order free of charge from: Umweltbundesamt, Bismarckplatz 1, D-1000 Berlin 31.

"Rettet die Luft" (1983)
by Umweltbundesamt. 36 pages. Order free of charge from the above address.

"Saurer Regen - Gefahr für unser Wald" (1983)
by Landesanstalt für Ökologie, Landschaftsentwicklung, und Forstplanung. 20 pages. Free of charge from: Ministerium für Ernährung, Landwirtschaft und Forsten, Rosstrasse 135, D-4000 Düsseldorf 30.

"Waldsterben durch Luftverschmutzung" (1983)
20 pages. By, and free of charge from: Bayerischen Staatsministerium für Ernährung, Landwirtschaft und Forsten, Postfach 311, D-8400 Regensburg.

"Letzte Chance für den Wald? — Die abwendbaren Folgen des Sauren Regens" (1983)
By Rainer Griesshammer. 140 pages. Order from B.U.N.D., Landesverband Baden-Württemberg e.V., Erbprinzenstrasse 18, D-7800 Freiburg.

"Wie krank ist unser Wald?" (1982)
By Günther Reichelt. 28 pages. From the above address.

"Der sterbende Wald in Südwestdeutschland und Ostfrankreich" (1983)
By Günther Reichelt, B.U.N.D. 50 pages. From the above address.

"Stirbt der Wald?" (1982)
By Hermann Graf Hatzfeldt (Hrsg.). 225 pages. Order from: Verlag C.F. Müller, Rheinstrasse 122, D-7500 Karlsruhe.

"Saurer Regen-Ursachen, Folgen und Gegenstrategien" (1982)
By ÖKO-Institut. 104 pages. Order from: Verlag Adolf Bonz GmbH, D-7012 Fellbach-Oeffingen.

"Die Versauerung — eine grenzenlose Bedrohung der Umwelt" (1983)
By the Swedish Ministry of Agriculture. 40 pages. 3 DM. Order from: SNV, Dept. of Information, Box 1302, S-171 25 Solna, Sweden.

"Skandinavien har ein Geheimnis das Sie angeht!" (1983)
By the National Swedish Environment Protection Board (SNV). Leaflet. Order free of charge from the above address.

"Forschungsergebnisse über Waldsterben durch Luftverunreinigung" (1983)
By Allgemeine Forst Zeitschrift, no. 26/27, July 83. 70 pages. Order from: BLV Verlagsgesellschaft, Postfach 400320, D-8000 München 40.

"Immisionsbelastungen von Waldökosystemen" (1983)
By Landesanstalt für Ökologie, Landschaftsentwicklung und Forstplanung Nordrhein-Westfalen. 58 pages. Order from: Name above, Leibnizstrasse 10, D-4350 Recklinghausen.

"Walderkrankung und Immisionseinflüsse" (1983)
By Ministerium für Ernährung, Umwelt und Forsten Baden-Württemberg. 24 pages. Order from: Name above, Marienstrasse 41, D-7000 Stuttgart 1.

"Den Wald Retten" Arbeitsmappe (1983)
By Koordinationsbüro Waldsterben with support from der Grünen and BBU. A "Campaign Pack" with articles, leaflets, information etc. 8 DM. Order from: V.i.S.d.P., H.G. Niemann, Roonstrasse 1, D-5800 Hagen 1.

List of materials...

SLIDE SHOWS

"Immisionsbedingte Waldschäden" (1983)
48 slides. 41.40 DM (including text pamphlet and postage). By and from: Landesanstalt für Ökologie, Landschaftsentwicklung und Forstplanung Nordrhein-Westfalen, Leibnizstrasse 10, D-4350 Recklinghausen.

"Waldsterben" (1983)
31 slides. By and from Landesbildstelle Baden und Landesforstverwaltung Baden-Württemberg, Karlsruhe.

FILMS

"Saurer Regen - die Spitze eines Eisberges" (1983)
About 30 minutes, full colour. 16 mm optical sound or video cassettes (VHS). Produced by and available from: SNV, Dept. of Information, Box 1302, S-171 25 Solna, Sweden.

STICKERS & BADGES

Are available from several sources, among others:

- Robin Wood, Postfach 102122, D-2800 Bremen 1
- Freudenstadt Aktionseinheit, Postfach 570, D-7290 Freudenstadt
- SNV, Dept. of Information, Box 1302, S-171 25 Solna, Sweden.

POSTERS

Some examples:

"Stoppt den Sauren Regen" (die Arche Noah), colour, 43x60 cm. Free of charge from: The Swedish NGO Secretariat on Acid Rain, Box 6400, S-113 82 Stockholm, Sweden.

"Schweigend Sterben die Wälder" (photo-collection) colour, 41x59 cm. 5 copies costs 20 DM (outside F.R.G. 25 DM) including postage. Order from: Arbeitsgemeinschaft Wald, c/o Mackentun, Wilschenbrucher Weg 21, D-2120 Lüneberg.

"Map over damaged forest areas in the F.R.G." 70x 100 cm. 2.50 DM. Order from: BBU, Friedrich-Ebert-Allee 120, D-5300 Bonn 1.

Dutch

Information pack "Zure Neerslag"
By and from Themagroep Zure Neerslag, c/o Susan Jehoram, Bachmanstraat 28, NL-2596 JL Den Haag, Netherlands. Price: 1.50 Guildens + postage.

Slide show: "Diaserie Zure Neerslag"
By and from Themagroep Zure Neerslag, the same address as above. To borrow.

Information pack also available free of charge from: Stichting Natuur en Milieu, Donkerstraat 17, NL-3511 KB Utrecht, Netherlands.

Poster: "Stop de zure regen" (Ark van Noach)
Free of charge from the Swedish NGO Secretariat on Acid Rain, Box 6400, S-113 82 Stockholm, Sweden.

French

"L'acidification aujourd'hui et demain" (1982)
By and from the Swedish Ministry of Agriculture. 166 pages. Order from: The Swedish Ministry of Agriculture, Fack, S-103 33 Stockholm, Sweden.

There are also some material from Canada available in French. You can find it in the "Acid Rain Resources Directory" (see English).

Spanish

"La acidificación hoy y manana" (1982)
By and from the Swedish Ministry of Agriculture. 166 pages. Order from: the same address as above.

"Lluvias acidas" (1983)
By and from Asociación Ecologista Castellana, Amigos de la Tierra de Madrid, Apartado de Correros 3.383, Madrid, Spain. 10 pages.

Norwegian

Information on material available can be obtained from: The Stop Acid Rain Campaign/Norway, Postboks 8268, Hammersborg, N-Oslo 1, Norway.

Swedish

In Sweden there are two existing "Activity Guide on Acid Rain", containing both a list on proposals on different activities and a guide to materials available.

1) **"Försurning - Aktivitetshandledning"** (1984)
   By and from Fältbiologerna, Box 6022, S-191 06 Sollentuna, Sweden. 24 pages.
2) **"Stoppa Försurningen - Kretshandledning"** (1984)
   By and from Svenska Naturskyddsföreningen, Box 6400, S-113 82 Stockholm, Sweden. 32 pages.
3) **Lists of materials** can also be ordered from Statens Naturvårdsverk, Informationsavdelningen, Box 1302, S-171 25 Solna, Sweden.

Table 2. Earlier and more recent measurements of pH in some Belgium fens

moorland pool	former pH	recent pH
Grote Klotteraard (sandy soil)	6.3 (1932)	4.1 (75-78)
Zwart Water (sandy soil)	7.6 (1933)	4.1 (75-78)
Gorigemberg (peaty soil)	4.65 (66-68) 3.99 (1970)	3.7 (75-78)

sources: Vangenechten J.H.D., Water Quality Bulletin 8, n° 3, 1983

The acidification situation in Belgium

Belgium is a small country, that has suffered a fairly large deposit of sulphur. In 1978, sulphur precipitation amounted to approx. 209,000 tonnes, which corresponds to roughly 7,000 kg per sq.km. A high proportion of the sulphur precipitation, around 50%, comes from other countries, mainly France, West Germany and the United Kingdom. The other half stems from Belgium itself.

Although Belgium has reduced its sulphur emissions in recent years (see Table 1), emissions are still on a fairly large scale, particularly if emission per capita or surface unit is compared with the figures for other Western European countries.

Emissions of nitrogen oxides is still increasing.

Acid rain

Measurements of the acidity in precipitation over north-eastern Belgium (the Campine) have shown pH values in the rainwater of around 3.8; in Antwerp, the mean ph value in the rainwater is 4.0!

Acid moorland pools

The soil in most of Belgium is rich in lime, and consequently very resistant to acid rain. Some regions, however, such as the Campine and the High Fens, have less resistant soils. So far, only the Campine Fens have been investigated. Dr. Vangenechten of the Nuclear Energy Research Centre in Mol has studied 24 moorland pools in the Antwerp and Limburger Campine region. His investigation revealed that these pools are extremely sensitive to acidification, owing in part to the very low neutralising capacity of the surrounding soils. The mean pH value of the pools was approx. 3.8. It should be observed, however, that there is a certain natural acidification in these pools, owing, for example, to the presence of white moss (Sphagnum sp.), and the predomination of pine (Pinus silvestris) in the woodlands.

Recent acidification

It has emerged, however, from comparisons between old and more recent measurements of pH that the fens have been acidified (see Table 2). Testimony to this face is provided also by the local population, who say that as recently as in the 1960s there were fish in the fens. Today there are almost no fish, and the fauna as a whole has been impoverished as a result of the acidification.

Forest damages?

It has so far proved impossible to demonstrate any connection between damage to forests, and acid precipitation. In some areas, however, such as Wallonia, there is clear damage to the forests, and even forest death. We must also be alert to the prospects of damage to the unique fir forests in the Campine, and the large monocultures of spruce in the Ardennes. It is perfectly obvious that careful investigations are needed in Belgium into any damage to the forests that may have been caused by air pollution.

Other damages?

Investigations are also lacking in Belgium into the effects of air pollution and acid precipitation on buildings and materials. Many objects of cultural significance are built of sandstone, which is particularly subject to filtration by acid rain.

Nor has any enquiry been made into the possible negative effects of air pollution on human health.

Tine Heyse/JNM

Kortrijksepoortstraat 140
B-9000 Gent, Belgium

Table 1. SO_2 emission in Belgium

	1973 (ton)	1975 (ton)	1980 (ton)	1982 (ton)
Industry	520 000 (45 %)	267 670 (32,8 %)	292 300 (36,6 %)	283 000 (42 %)
Powerstations	412 500 (35,7 %)	292 200 (34,6 %)	374 260 (46,8 %)	284 170 (42 %)
Private heating + small industry	200 500 (17,3 %)	244 770 (30 %)	113 880 (14,2 %)	88 660 (13,1 %)
Traffic	22 700 (2 %)	30 840 (3,6 %)	18 350 (2,3 %)	19 750 (2,9 %)
Total amount	1 155 700	844 500	798 790	676 380

sources: Info-Leefmilieu, 1983, n° 6, p. 176.

The Acid Rain Network:

Funding Conference Highlights

There are 507 point sources of sulfur dioxide in the U.S. and Canada that emit more than 10,000 tons of SO_2 per year, and total U.S. emissions amount to more than 26 million tons per year. Emissions from these 507 facilities are primarily responsible for the acidification of North America. These emissions must be reduced by at least 50 percent if the trend toward acidification is to be reversed. The Founding Conference of **the Acid Rain Network** was held at Grand Portage, Minnesota, this past September to initiate the campaign that will reduce emissions from these point sources, **stack by stack.**

The function of the Acid Rain Network, then, is to speed up the public and private decision-making process. Our job is to identify and create oppurtunities for individuals and organizations to effect decisions that will reverse the trend. Business associations, sport hunting/fishing organizations, indian organizations, affected industries, consumer groups, community organizations and others threatened by acidification need to become involved. The trend can be reversed as government, industries, and individuals understand their own best interests and decide to:

1. Retrofit pollution control equipment on existing coal-fired boilers;
2. Increase energy conservation and increase reliance on renewable energy resources — it is easier, safer and cheaper to avoid making the mess than it is to clean it up.

Acid Rain Network News is the communications vehicle of the Acid Rain Network. It will be published regularly by the **North American Water Office, 1519 A East Franklin Ave., Minneapolis, MN 55404, U.S.A.** 612-872-1097.

Subscription rates for Network News will be established as soon as the financial solution of the Acid Rain Network stabilizes. Meanwhile, donations will be gratefully accepted.

The North American Water Office will also produce the **Acid Rain Intelligence Report,** a worldwide news clipping service, on a monthly basis. The Intelligence Report is available at 25.00 dollars per month, or 250.00 dollars per year.

From Acid Rain Network News Vol. 1, N° 1, Winter 1984

Canada gives cautious approval to moves to cut U.S. acid rain

—Canadian officials gave cautious approval yesterday to moves by four U.S. states to sue the Environmental Protection Agency (EPA) unless it forces midwestern power plants to cut emissions which cause acid rain in those states and in Canada. In a for-

In a formal notice received by the EPA this week, New York, Vermont, Maine and Rhode Island charged that the agency had failed to respond to earlier requests to order reductions in midwestern sulphur dioxide emissions which they said were carried eastward by prevailing winds.

"Each year billions of dollars in property damage and grievous public health impacts occur as a result of acid rain and interstate movement of sulphur dioxide pollution", said the notice.

The four northeastern states were joined by three environmental groups — the National Wildlife Federation, the Sierra Club and the Natural Resources Defence Council — and two Pennsylvania residents who own property in Ontario.

In Canada there is growing frustration over the failure of the Reagan administration to introduce acid rain controls, but officials cautiously welcomed the moves.

"It is clearly directed at the fact that they (the administration) have allowed increased emissions since 1980," said Walter Giles, Ontario's associate deputy environment minister.

On paper at least, power utilities have been allowed to pump 1,5 million more tons of sulphur into the atmosphere every year since 1980 when Canada and Washington signed a letter of intent to curb emissions, Giles said.

From Toronto Star 1984-01-19