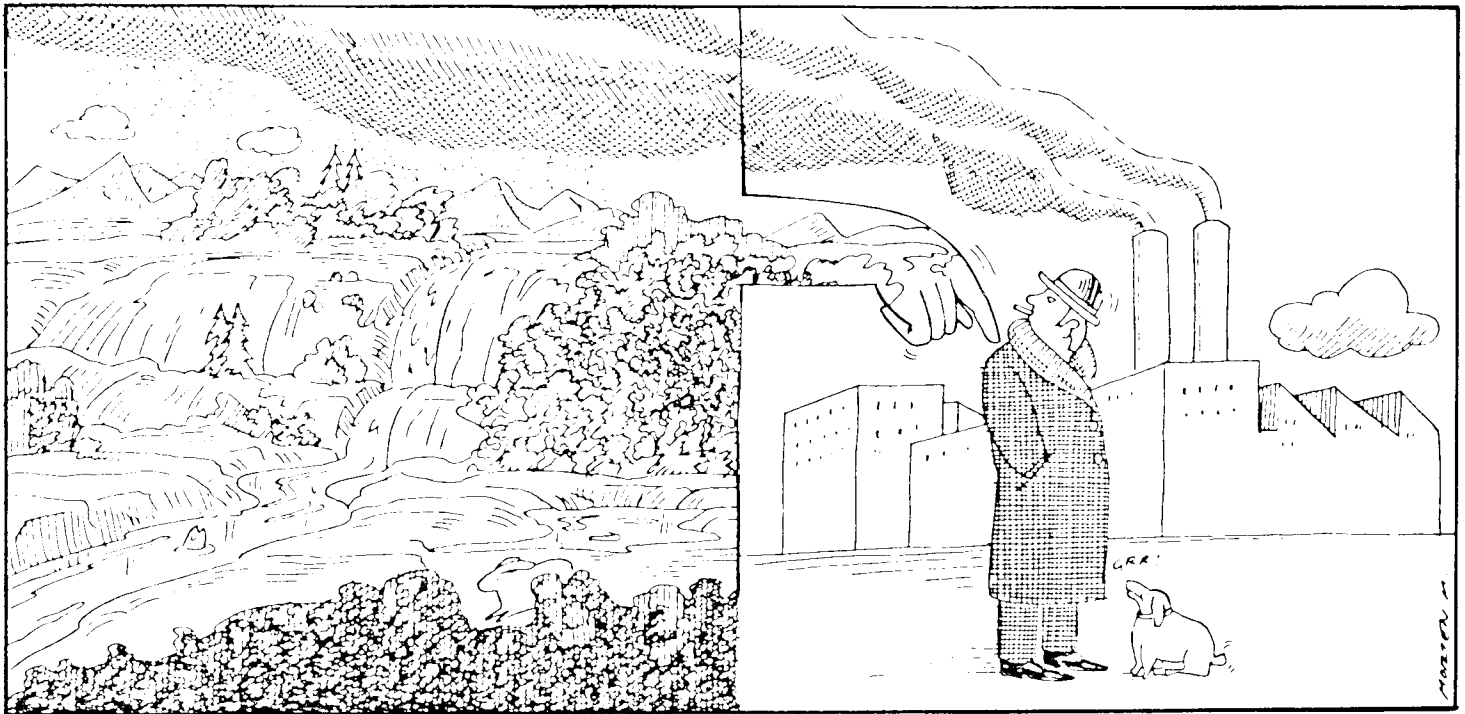


Acid News

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



Morten Kristiansen

UNEP ACID RAIN REPORT

On the occasion of World Environment Day on 5 June, the UNEP (United Nations Environment Programme) presented its report **"The state of the world environment 1983"**, written by the UNEP's executive director Dr. Mustafa Tolba. One of the three major environmental issues selected for this report was Acid Rain. The sub-report in question is a compilation of our present knowledge of the problems of Acid Rain, and it contains a wealth of facts and figures. It discusses and describes the causes, the effects, and conceivable measures.

Measures

The UNEP has succeeded very well in describing in fairly concise terms the broad features of the entire problematology of Acid Rain. Its proposals for measures agree in the main with the views of the environment organisations. In its concluding remarks, the report states:

"Adding lime to water and soil could control the effects of acidification to some extent, but this does not offer any lasting solution to the problem. So the most feasible approach is to control air pollutants at source. Several technologies for doing this are readily applicable to fullscale plants. They include removing sulphur from fuel, techniques for burning fuel that

give rise to low levels of pollution and ways of cleaning the gases given off (especially sulphur). Of course, full advantage should be taken of energy conservation, and of the use of low-sulphur fuels and non-polluting or less-polluting sources of energy."

Elsewhere in the text, the report states: *"It may also be necessary to remove nitrogen oxides from emission gases"*.

Intensified research

Attention is also drawn to the importance of intensified research in certain fields, for example:

– how the pollutants are transported, and how they undergo changes in the atmosphere,

- the dry deposition of polluting gases and particles, and their effects on water, soil, foliage and other recipients,
- the effects on soils and forests, especially in the long term,
- possible effects on human health of the increasing spread of cadmium and other metals as a result of acidification;
- furthermore, there must be more effort to research and develop ways of improving energy conservation, environmentally appropriate technologies for producing heat and power, and techniques for removing sulphur from fossil fuels and gaseous emissions. →



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.

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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 (Nature 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 Fiskerforbund)
- 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-0510 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 (Fritidstiskarna)
- 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!



→ UNEP ACID RAIN REPORT

Ecological approach?

The report, naturally, also has its weaknesses. An example is its description of the effects on land and sea ecosystems, where the report tends to take an excessively technical view of environmental damage, by calling attention mainly to direct threats to human health and national economies. We must remember that the natural environment, with its richness of species and complicated interplay, is an invaluable and indispensable resource *per se*. The effects of Acid Rain, and acidification of the natural environment, involve an enormous burden that in some cases completely, and in the worst event irreversibly, disrupts the original balance. We can mention by way of example the acidification of freshwater areas that has led to new, considerably impoverished (in that they are less rich in species) ecological systems, which in many cases also have sharply increased contents of metals.

A similar argument can be made regarding the effects of acidification on forests and soils. Our forests must never be seen purely as an economic and material resource. They constitute a life environment beyond price, not only for numerous animals and plants, but also for human beings.

Emissions increasing?

It is noted at the beginning of the report that "There are indications that sulphur-dioxide emissions have not increased in recent years, as they were predicted to do, and are not likely to rise over the coming decades

either". This assumption is remarkable indeed, particularly in the light of what is stated in another report, "The effects of changing patterns of energy use on sulphur emissions and deposition in Europe" by Highton and Chadwick (see Acid News 2/83 pp. 6-10). This notes that "...in the absence of significant new emission controls, total emissions in the Region (= whole of Europe) may increase by about one third over the next two decades as a result of increased coal use - despite the growth of other energy sources which do not result in significant sulphur emissions". This report is, in fact included in the list of references appended to the UNEP report.

Fertilised soils?

At the very end of the report, the possibility is mentioned of certain soils being "fertilised" by the increased fallout of sulphur and nitrogen, and the conclusion is drawn that "This could add a significant factor to calculations of costs and benefits from pollution..." This must be regarded as a very remarkable assumption indeed in that (as mentioned in the report) no studies whatsoever exist to support this theory. Also, if it should be the case, this is still extremely unlikely to balance out in any way all the negative effects of these air pollutants as listed early in the report.

Conclusion

The report concludes with the consensus reached at the "Ministerial Conference on Acidification of the Environment" in Stockholm in June 1982. The representatives from 21 countries were agreed that urgent action should be taken under the Convention on Long-range Transboundary Air Pollution, including:

"a) Establishing and implementing concerted programmes to reduce sulphur and, as soon as possible, nitrogen oxide emissions.

b) Using the best technology available that is economically feasible to reduce these emissions, taking account of the need to minimise the production of wastes and pollution in other ways.

c) Supporting research and development of advanced control technologies

d) Developing and implementing energy conservation measures further

e) Developing the North American monitoring programmes and EMEP



further, through better geographical coverage, improved data on emissions, standardising sampling and measurement techniques, and improved modelling, among other measures."

Acid rain in developing countries

It can be mentioned, finally, that the UNEP also raises in its report a sub-

sidary question within the overall problematology of acidification, and one to which far too little attention has hitherto been paid, namely the importance of following the course of events in the developing countries. Given the rapid industrialisation and urbanisation that are taking place there, it is of the utmost importance i) to investigate as quickly as possible how sensitive these areas are to acid

deposition, and ii) to try in every way to prevent these countries from making the same mistakes as have been made in the already industrialised world. If an effort of this kind is made in time, it may be possible to save these countries from a catastrophe resembling that which we see today in North America and Europe.

Christer Ågren

Pressrelease from UN-EP, 5 June 1983:

State of the Environment Report: Acid Rain

West Germany is to spend up to five billion dollars over the next 10 years to fight the fast-growing international problem of acid rain.

This decision, personally announced by Chancellor Helmut Kohl, is the most important action yet taken by any country to combat the problem, which is turning between five and 10 million square kilometres of Europe and North America acid.

The deadly rain has killed hundreds of lakes on both continents and eaten away at many buildings, including some of the world's most important ancient monuments. It seems to be severely damaging some forests and may imperil cropland and pose a substantial threat to human health.

The German measures are particularly significant because the country has been one of the main producers of the pollution, which comes from the burning of fossil fuels, particularly in power stations, factories and motor vehicles.

These emit sulphur and nitrogen compounds which can be blown up to thousands of kilometres by the wind. These compounds come down as acid fall-out, either as gases or by turning the rain into dilute sulphuric or nitric acid.

"It is a particularly modern, post-industrial form of ruination," says Dr. Mostafa Tolba, executive director of the United Nations Environment Programme in his official annual State of the Environment Report issued in connexion with World Environment Day, June 5th.

"It is as widespread and careless of its victims and of international boundaries as the wind that disperses it," he adds.

Exporting countries

Because the sulphur and nitrogen compounds in the air can travel so far before doing their damage, the countries that produce the most are not always the worst affected and relatively "innocent" nations suffer disproportionately. A major OECD

study showed that Britain, West Germany, Italy and several Eastern European countries exported huge amounts of the pollution, while Scandinavian countries received much more than what they produced. In North America, large amounts of the pollution are blown into Canada from the United States.

The issue has been a sensitive one since the great Stockholm Conference on the Human Environment in 1972, when it was raised by Sweden.

Since then, the Scandinavian countries have been campaigning to persuade "exporters," particularly Britain and West Germany, to cut down their pollution. More recently, Canada has been putting pressure on the United States: the issue was at the top of the agenda of one summit meeting between Prime Minister Pierre Trudeau and President Ronald Reagan.

Waldsterben

The crunch came for West Germany when it was suddenly discovered that its great forests, so dear to the hearts of its people, were being affected by the pollution. In his report, Dr. Tolba quotes evidence that 7.7 percent of the forest area has been damaged, 3/4th of it only slightly.

The psychological impact of the problem in the country was enormous.

It became a potent political issue and in the elections which took place early this year, hardened politicians swiftly announced their conversions in the face of persistent campaigning by the "green" party.

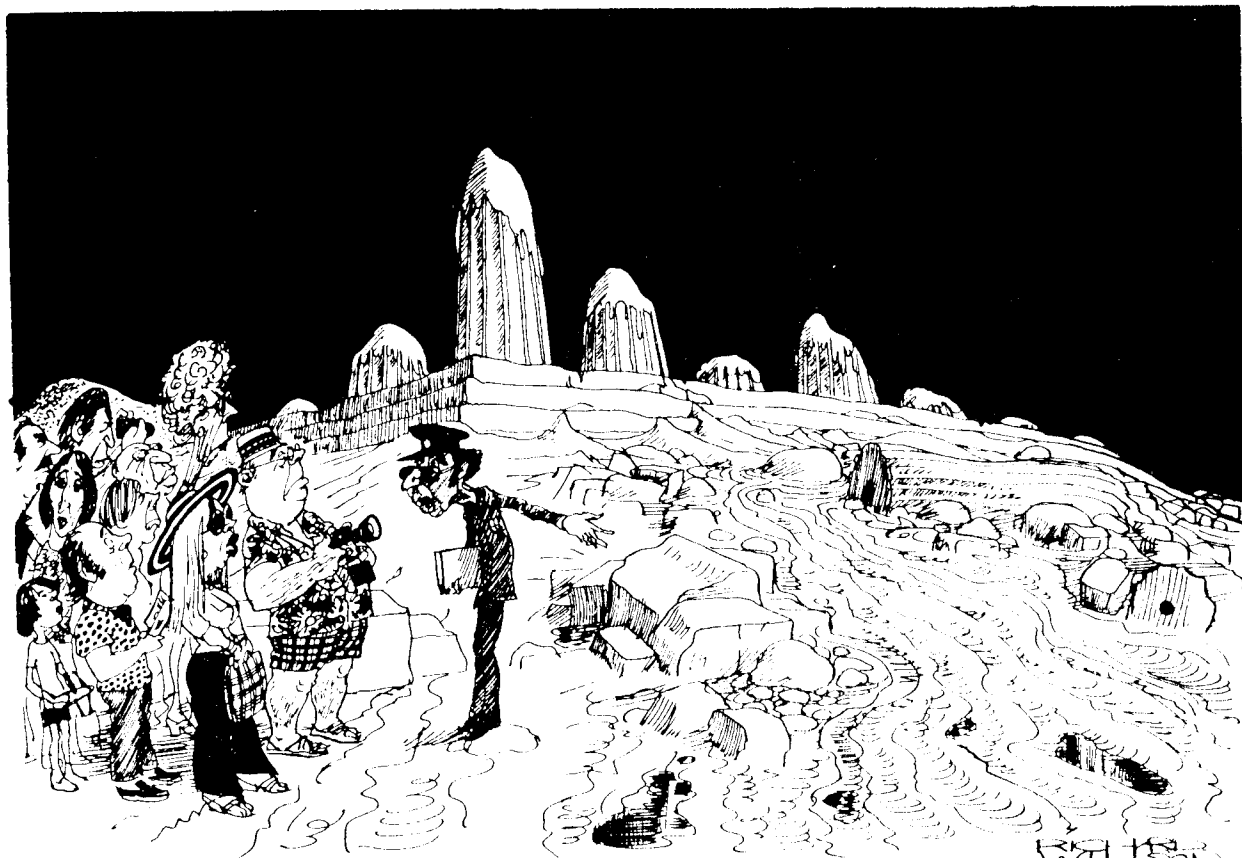
"I used to think all this talk about dying trees was exaggerated," Hans-Jochen Vogel, leader of the Social Democrats, told an election rally in Dusseldorf. He went on to describe how he had undergone a "green" conversion after seeing fir trees scorched by acid when he was on holiday in Bavaria.

"We must get out of the habit of behaving towards Nature like an army of occupation with a conquered territory," he said.

And in announcing the new measures just two weeks before the vote, Chancellor Kohl described the forests as "at five minutes to midnight."

German measures

The measures are aimed at halving the amount of sulphur dioxide emitted from power stations and large factories by 1995. New pollution limits have been laid down and plants will either have to introduce controls to meet them or be closed down. →



"WELL, LADIES AND GENTLEMEN, WE WERE GOING TO SEE THE PARTHENON TODAY, BUT UNFORTUNATELY, IT RAINED."

The chancellor estimates that the measures would cost the West German economy between two and a half and five billion U.S. dollars over the next 10 years. The country is also pressing in the European Economic Community for new controls on pollution from car exhausts, the other main source of the trouble.

This action will put pressure on other leading "exporters" to take effective measures and was received with delight in Scandinavia and other badly affected areas.

UNEP's report

Dr. Tolba's report describes how these areas have suffered. They are particularly vulnerable because their soil and bedrock are made up of minerals like granite, gneiss and quartz-rich rocks which contain little lime and do not weather easily and so can do little to neutralise the acid when it falls.

Out of 5,000 lakes scattered over 28,000 square kilometres of southern Norway, reports Dr. Tolba, 1,750

have lost all their fish and 900 others are seriously affected. Damage to fisheries has been found in 2,500 Swedish lakes and is thought to have taken place in another 6,500. And nearly a fifth of all the lakes that have so far been examined in Ontario, Canada, have either been turned acid or are extremely sensitive to the process.

As the water becomes more acid, the amount of aluminium in it rapidly increases, and the metal is very toxic to fish. As the water gets even sourer, highly toxic metals like cadmium, lead and mercury become soluble – and there is a danger that they may reach people through food and drinking water.

Meanwhile, says Dr. Tolba, the acid corrodes most materials used in the construction of buildings, bridges, dams, industrial equipment, water supply networks, underground storage tanks, hydroelectric turbines, and power and telecommunication cables.

"Some of the world's greatest cul-

tural treasures, including the Parthenon in Athens and Trajan's Column in Rome, are being eaten away by acid fall-out," he adds.

Dr. Tolba says that the damage to water can be alleviated by adding lime to lakes, rivers and streams and/or their catchment areas. But this is no real cure.

"The only lasting solution is to reduce the emissions of the pollutants in the first place," he says. The report spells out ways in which this can be done and how much they are likely to cost.

And it warns that although acid rain was first found in industrialised countries, it may well spread to developing countries because "it is likely to occur wherever fossil fuels are intensively used."

UNEP
Geneva Office
Palais des Nations
CH-1211 Geneva 10
Switzerland

Dismal figures from fishery researchers.

Can Hardangervidda be emptied of fish?

Canada - Norway cooperation

This new research project is to extend over five years. The bulk of the grants obtained stem from Canadian authorities. The Norwegian Environment Department is also paying part of this research, which will cost around NOK 1 million a year. Apart from protecting an area from Acid Rain, NIVA is interested in studying what will happen in a watercourse in Sogn that still has a healthy water chemistry; here, Acid Rain is to be introduced artificially.

Urgent actions needed

"How much cleaner does the rain have to be, if the fish are actually to return to watercourses that have by now been devastated?"

"If half the rivers in Sørland are to re-acquire their natural balance, then sulphur emissions must be reduced by at least 50%."

On 7 June the Nordic governments will be proposing an international agreement on Acid Rain to the effect that emissions in Europe should be reduced by 30% in the space of ten years. This Arne

Henriksen believes will restore about one fifth of the lakes and watercourses that have been hit.

Fishkill spreading

"And what will happen if it proves impossible to reach agreement on a reduction of sulphur emissions in the European countries?"

"If we get rain that is still more acid, then there is a risk of large areas of Vestland suffering the same fate as Sørland has suffered in recent years," says Arne Henriksen, who emphasises also the importance of monitoring new areas of southern Norway in order to follow the spread of this environmental damage.

Hardangervidda, Norway's national shrine as well as a National Park, can be the next victim of Acid Rain and fishkill in that country. Acid Rain is no longer a problem restricted to Sørland. Vestland and Oppland are now also losing the fish from their rivers and lakes.

Research roof

Norwegian experts on Acid Rain now intend to build a roof over a small area in Sørland, in an attempt to

demonstrate that the countryside can become healthy again if only air pollutants from the Continent are reduced.

Damage from Acid Rain has spread in southern Norway, in spite of the fact that the amounts of Acid Rain falling over Norway have not increased in recent years. Acidified rivers have been found as far up as Møre and Romsdal.

Researchers agree that the only solution to the problem is to ensure that flue gases from power stations and industrial plants south of the North Sea are made cleaner. Several countries in Europe, including the United Kingdom, have long refused to acknowledge their responsibility for Acid Rain. It has also been maintained in some quarters that a reduction in sulphur emissions would not help the fish in Norwegian waters and watercourses.

"We are certain that a reduction of emissions would have a major positive effect, and that we hope to demonstrate by this new roofing-in project," says researcher Arne Henriksen of the Norwegian Institute for Water Research (NIVA).

* * * * *

Norwegian Institute for Water Research

Comparing European and American lakes

Acid Rain has the same effect on lakes in North America as it does in Europe.

That is the main conclusion drawn from a study performed by the Norwegian Institute for Water Research (NIVA) at the request of the USA's Environmental Protection Agency (EPA).

NIVA has compared data from about 1,400 lakes in North America and a similar number of lakes in Eu-

rope. Its report (Report 4/1983, Predicting acidification of Northern American lakes, NIVA) thus states that the water chemistry of lakes with the same degree of acidification is identical in Europe and North America.

Foreseeing acidification

These investigations also show that you can foresee the degree of acidification of the water from the quality of the precipitation and the natural sensitivity of the water. It is further

possible to foresee what pH values different groups of lakes will have in the future, with a given load of precipitation. Both the researchers and the EPA are interested in a follow-up on the project, and this is now under discussion. The problem to be posed in such a follow-up is whether it is possible to forecast how quickly a change in the pH values of lakes can take place.

Trygve Aas Olsen

AMERICAN SCIENTIFIC PANEL PROPOSES SHARP SO₂ REDUCTIONS TO FIGHT ACID RAIN

The National research Council, an arm of the United States National Academy of Sciences, has prepared a report drawing a direct link between national SO₂ emissions and acid deposition in the U.S.A. and parts of Canada. The report, to be released in final form at the end of June, strongly suggests that acid rain can be controlled if power plants and other industrial facilities are required to sharply reduce their SO₂ emissions.

The Reagan administration has argued that SO₂ abatement must

await a solid scientific consensus that SO₂ reductions will reduce acid rain. This important report offers such a consensus. It is the first broadly based scientific report to predict that percentage reductions of SO₂ will proportionately reduce acid rain.

The new report is likely to encourage U.S. lawmakers, environmental organizations and Canadian government officials in their proposals for legislation to reduce SO₂ emissions, especially from older coal-burning power plants in the U.S. Midwest.

William Ruckelshaus, the new ad-

ministrator of the U.S. Environmental Protection Agency, has been reassessing the administration's resistance to acid rain abatement action. He said recently that the new report will buttress the Canadian government's contention that both the U.S.-A. and Canada must reduce SO₂ pollution by 50 per cent within the next decade to halt ever-widening environmental damage in both countries.

Armin Rosencranz

Acid Rain policy: US TOWARDS A MOVE?

"President Ronald Reagan is losing control over American environment policy. We are now launched on a process towards a better environment policy, and I think that the USA will shortly be displaying an entirely different attitude than previously on environmental issues."

"There are certain signs, for example, to suggest that the USA will be prepared in the not too distant future to support the Scandinavian proposal that all sulphur emissions should be reduced by 30% in the space of ten years."

New EPA director

That, at any rate, is the view of **John Carroll**, Associate Professor of Environmental Conservation at the University of New Hampshire, writing in the Norwegian periodical "Nationen". In Carroll's view, the reason for this new orientation is the recent change in the leadership of the Environmental Protection Agency (EPA). Its new director, William Ruckelshaus, is according to Carroll a much more independent person than his predecessor Anne Gorsuch, and he will have no trouble getting Congress to back him in his efforts to realign policy.

"The first thing Ruckelshaus has to do is clean up the scandals in domestic policy, and the internal mess

in the Agency. However, it won't be long before a new American attitude to the issue of Acid Rain also becomes evident," John Carroll foresees.

Political pressure needed

Obviously, the proposals of the Scandinavian countries to the ECE Convention will acquire greater importance in the fight against Acid Rain if backed by the USA. However, Carroll foresees that it will probably take a little time before the new Environmental Protection Agency can get the question dealt with. And as regards UK backing for the proposal, Carroll believes that only strong pressure from the EEC can help.

John Carroll, who has just completed a study trip to several European countries, published at the end of April a book entitled "Environmental Diplomacy: An Examination and a Prospective of Canadian-US Transboundary Environmental Relations". In this book, he emphasises that conflicts on the subject of Acid Rain may soon be causing more serious problems between the USA and Canada than any political and economic issues.

Trygve Aas Olsen

NEW BOOK

"Acid Rain in Europe and North America – National responses to an international problem"

(244 pages)

by Gregory S. Wetstone and Armin Rosencranz.

"The book gives a detailed examination of the nature and severity of the acid rain problem, what nations are doing about it, and how national and international laws and policies might ultimately respond."

The book costs \$ 16.50 and can be ordered from:

Environmental Law Institute
1346 Connecticut Avenue N.W.
Washington, DC 20036 USA

GERMAN BOOKS

***"Was Sie schon immer über Luftreinhaltung wissen wollen."**

by Bundesministerium des Innern (erarbeitet vom Umweltbundesamt)

(168 pages)

Can be ordered free of charge from:
Umweltbundesamt, Bismarckplatz 1,
D-1000 Berlin 31, BRD

* **"Rettet die Luft"** (36 pages)

by Umweltbundesamt

Can be ordered free of charge from the same address as above.

* **"Saurer Regen – Gefahr für unser Wald"** (20 pages)

by Landesanstalt für Ökologie, Landschaftsentwicklung und Forstplanung

free of charge from Ministerium für Ernährung, Landwirtschaft und Forsten
Ross-Strasse 135,
D-4000 Düsseldorf 30, BRD

NEW RULES ON EMISSION TO BE INTRODUCED IN DENMARK

In February the Socialistisk Folkeparti proposed to the Danish Parliament that acidification of the environment should be reduced.

Emission limits needed

Referring i) to the fact that Danish emissions are spread in part to Sweden, Norway and West Germany, where serious damage has already been caused, and ii) to the feared effects on forests and subsoil water in Denmark, it was proposed that the Danish government should establish limits for emissions of sulphur dioxide. It is Denmark's power stations that account for the greater part (54%) of the country's present sulphur emissions, which amount to approx. 235,000 tonnes. A fairly recent study (ELSAM) shows that if the flue gases of the Danish power stations producing electricity were to be

desulphurised to 85%, Danish sulphur emissions would be reduced by 108,000 tonnes. According to ELSAM this would cost around DAK 4 billion, which is to say about DAK 1 billion a year. This in its turn would raise the price of electricity by 2-3 øre per kWh, or approximately 4%.

Economic gains

Attention was drawn also to certain attempts to estimate the economic gains of reduced sulphur emissions, using calculations by ELSAM and the OECD. Reduced corrosion, better harvests, and less injurious effects on health would give a "profit" in Denmark alone of, at a low estimate, DAK 750 million per year. To this, however, must be added the benefits achieved in neighbouring countries, and the value of increased investments in the country's industry.

Further gains can also be made in that power stations with flue-gas desulphurisation can use considerably cheaper coal, with a higher sulphur content.

Proposal rejected

This proposal, however, was rejected by the Danish Parliament, on the grounds that it did not wish to anticipate the inquiry currently under way at the Environment Board, and scheduled for completion at the end of 1983. On the other hand, the Minister for the Environment undertook to raise the issue again in Parliament in sufficient time for any legislation to limit emissions to be introduced during the coming working year, 1983-84.

Christer Ågren

ALUMINIUM IN THE DRINKING WATER

In April, reports were received of unusually high concentrations of aluminium in the subsoil resources used for drinking water in Vestjylland in **Denmark**. The highest permitted quantity of aluminium in drinking water in Denmark is 0.2 mg/l, but the concentrations in many wells proved to be 1-2 mg/l, and in one case as high as 9.2 mg/l. The reason for these high concentrations has not yet been established, but it cannot be excluded that they are an effect of acidification.

The Stop Acid Rain Campaign/Norway

Preparing a tour for journalists

British journalists are to be invited in mid September to Norway for an orientation on the problems of Acid Rain. They will also be given an opportunity to study in more detail the specific problems encountered in Scandinavia.

This offer has been made on the initiative of the Stop Acid Rain Campaign/Norway, and further information concerning the arrangement can be obtained from the Norwegian Campaign Secretariat.

MILLIONS ON LIMING!

The Swedish government is investing SEK 65 million (= USD 10 million) in measures against acidification during the coming year. Of this sum, SEK 54 million is to be used to add lime to lakes and watercourses. It has been thought necessary to spend this money on the adding of lime in order, among other things, to save genetically unique strains of e.g. salmon, sea and lake salmon-trout, and char. And in the

short term at least this is the only way to prevent the extermination of the most sensitive species, such as crayfish.

If lime enough to compensate for the annual precipitation of acid rain over Sweden were to be added to all the lakes and watercourses – which is not of course practically possible – it would cost at least SEK 300 million. Also, the whole problem of the acidification of soils and subsoil wa-

ter would still remain.

SEK 6 million is to be used for research and trials with the adding of lime to soil and to subsoil water. Of the remaining funds, SEK 4 million is to be spent on various followups and investigations, and SEK 1 million on information.

The grant last year was SEK 40 million, and for the coming year, fiscal 84/85, a sum of SEK 85 million has been promised for similar efforts.



Acid rain kills Welsh fish

ACID RAIN is decimating the fish stocks of many Welsh rivers, according to a report presented to the Welsh Water Authority by Roscoe Howells, its director of scientific services, this week.

A survey has revealed that "many of the upland streams, rivers and lakes draining afforested catchments in Dyfed and Gwynedd [south-west and north-east Wales respectively] cannot now support natural fish populations and have depleted populations of aquatic plants and animals".

In the river Tywi in mid-Wales "native brown trout cannot survive the combined effects of the acidity and elevated aluminium concentrations found in water draining from conifer forests in the area." The Berwyn catchment in north Wales is now too acidic even to support the American Brook Charr, which was introduced specifically to cope with the acid. Howells adds: "The genetic implications of introducing exotic species are causing concern."

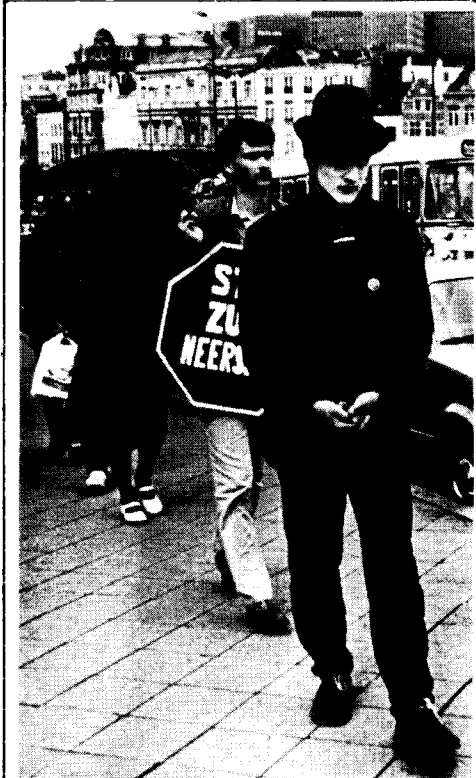
In the Brienne catchment of mid-Wales streams with a hardness of

less than 8 milligrams per litre of calcium carbonate "have a depleted flora and fauna and salmonid fish are either absent or present only in small numbers".

The report goes on to warn that "failure to neutralise acidic waters can result in excessive corrosion of [water] mains with, in some areas, unacceptably high lead levels due to plumbosolvency" [that is, lead in pipes being dissolved by the acidic waters].

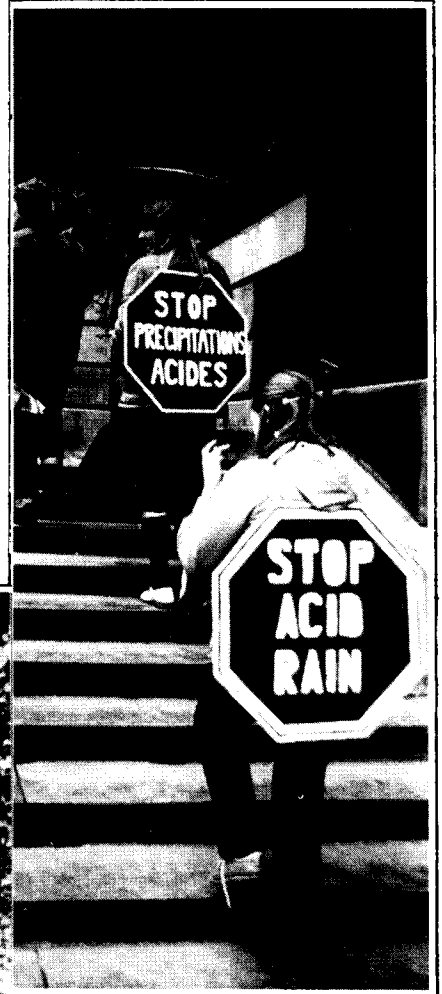
from New Scientist, 12 May 1983

FISHERY MANAGEMENT CONFERENCE



The 15th Fishery Management Training Course is to be devoted to the theme of Acid Rain. It will be held **7-9 October** in Romsey, Hampshire; in the UK. Those taking part will include fish-breeders, amateur fishermen, fishing organisations etc., together with representatives from the Ministry of Agriculture, Fisheries and Food, and from the National Farmers' Union. The Swedish National Anglers' Association, one of the organisations behind the Swedish NGO Secretariat on Acid Rain, has been invited to send a representative, and will naturally take advantage of this offer.

If you are interested in learning more about this course, write to:
Alex Behrendt
Two Lakes
Crampmoor, nr. Romsey
Hampshire SO5 9BA
United Kingdom



The pictures show the street-action, carried out by four non-governmental youth organisations from Belgium and the Netherlands. The action was in Brussels at the same time as the EG public hearing on acid rain, the 19th April. (see Acid News 4/83.)

Photo: Pieter Mogrée

Conference on reducing emissions of SO₂, NO_x and dust

The conference is arranged by Verein Deutscher Ingenieure; Kommission Reinhaltung der Luft. It is held in Essen at November 10-11, 1983. For further information, please contact:
VDI-Kommission Reinhaltung der Luft
P.O.B. 1139
D-4000 Düsseldorf 1 BRD



Royal society symposium

At 5-7 September, 1983, The Royal Society in Great Britain arranging a "Symposium on Ecological Effects of Deposited Sulphur and Nitrogen Compounds".

A great number of scientists from both Europe and North America will speak at the symposium.

For further information, please contact:
Nigel Dudley
13 Heol Maengwyn, Machynlleth
GB - Powys, Wales, SY20 8EB

Noah's Ark poster



STOP ACID RAIN

The emissions of sulphur and nitrogen oxides from mainly power stations and factories are polluting the air and making the rain more acid. This acid rain harms soil, crops, trees and water life, including fish. It also corrodes metals and building material. High concentrations of sulphur- and nitrogen oxides in the air also harms human health. This is why acid rain today is one of the world's most serious environmental problems. If it is allowed to continue we shall soon have to build a new Noah's Ark. Which is why we must — quickly! —

★ **REDUCE THE SULPHUR CONTENTS IN COAL AND OIL**

By reducing the sulphur content of coal and oil, the sulphur dioxide emissions from power stations and factories will be reduced.

★ **CLEAN THE WASTE GASES**

By cleaning the waste gases from power stations and factories, the sulphur dioxide emissions will be reduced.

★ **INVEST IN NEW METHODS OF COMBUSTION**

By investing in new methods of combustion, the sulphur dioxide emissions from power stations and factories will be reduced.

★ **REDUCE THE WASTE OF ENERGY AND MATERIALS**

By reducing the waste of energy and materials, the sulphur dioxide emissions from power stations and factories will be reduced.

★ **INVEST IN RENEWABLE ENERGY SOURCES**

By investing in renewable energy sources, the sulphur dioxide emissions from power stations and factories will be reduced.

★ **EXPAND PUBLIC TRANSPORT SERVICES**

By expanding public transport services, the sulphur dioxide emissions from power stations and factories will be reduced.

★ **COMPLY WITH THE ECE CONVENTION**

An international Convention exists, by which countries undertake to reduce their sulphur dioxide emissions. We must be sure that every country complies with that Convention.

The poster is produced by The Swedish NGO Secretariat on Acid Rain, and it is available with text in English,

German or Dutch (and also in Swedish and Norwegian). It is printed in four-colour, and the size is approximately 43 x 60 cm.

The poster can be ordered from the Secretariat, free of charge for non governmental environmental organisations.

Leaflet on acid rain

Enclosed with this issue of Acid News you find a copy of a newly produced "tourist leaflet". The leaflet is produced by the National Swedish Environment Protection Board, in cooperation with a number of non governmental environmental organisations in Sweden and Norway. This will mainly be spread to foreign tourists visiting Scandinavia this summer.

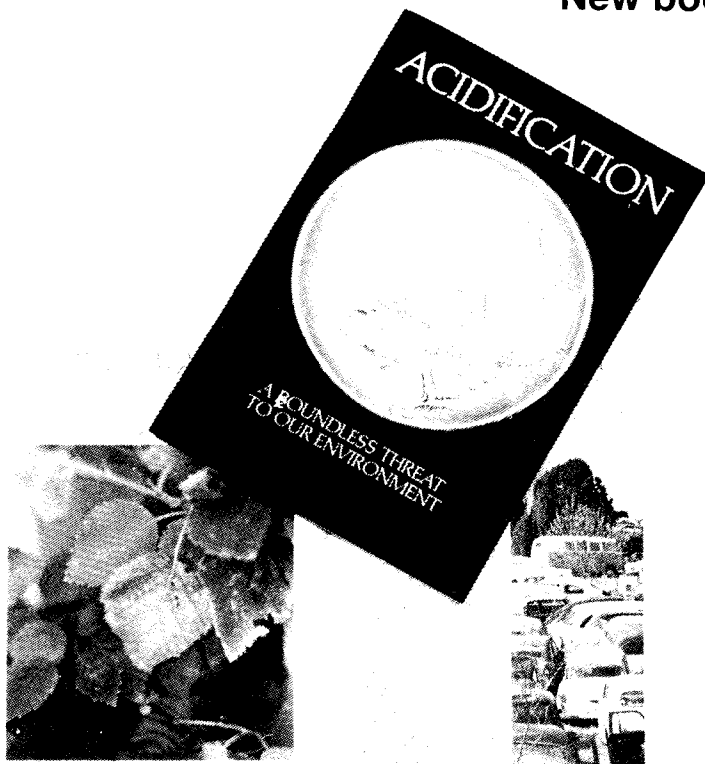
Of course it could also be used in a number of ways outside Scandinavia. Perhaps Your organisation could use it as information material in Your country?

It is available free of charge, in both English and German, and can be ordered from:

The National Swedish Environment Protection Board
Department of Information
Box 1302
S-171 25 SOLNA SWEDEN



New book on acid rain



A new "short version" of "Acidification Today and Tomorrow" has now been produced. The new edition is of 48 pages, and its Swedish title is "Försurning – Ett Gränslöst Miljöhot". (Acidification – a boundless threat to the Environment / Versauerung – eine grenzenlose Bedrohung der Umwelt) It is published by the Swedish Ministry of Agriculture, and will be **available in both German and English**. This book will be sent to all of you who now receive "Acid News" and if you would like further copies you can order them (free of charge) from:

The National Swedish Environment Protection Board
Department of Information
Box 1302
S-171 25 SOLNA SWEDEN