



Environment
Canada

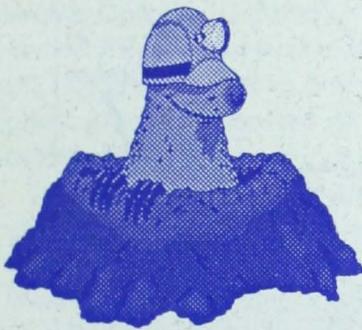
Environnement
Canada

Z e p h y r

Summer 1993

ATMOSPHERIC ENVIRONMENT SERVICE NEWSLETTER

The "dogs" of weather



Catherine Young

Most of us, I think you'll agree, venture outdoors in the summer to relish the season's fine weather. Not so for a bold, professional group of Western storm chasers who embark upon daring conquests to track Mother Nature's severe summer havoc. Here's their story...

"Fighting Prairie Weather Dogs" only come out in the summer. These tenacious rodents are a team of 15 forecasters and technicians from Central Regions's Prairie Weather Centre, Scientific Services Division and the Winnipeg Weather Office. For the past three years, this group of voluntary and courageous storm troopers have been tracking and trailing severe weather storms.

Inspired by a celebrated unit of American storm chasers, the Winnipeg weather personnel came up with the idea for a Canadian team. And because of its spectacular summer storms, Manitoba was an ideal place to start the group.

But why the name? One of the founding Dogs, Pat McCarthy explains, "We wanted something that symbolizes the Prairies. When you look at prairie dogs near their burrows, they're always sitting and watching for hazards, just like eagles. They're sentinels. And besides, we wanted something scrappy."

When a turbulent storm approaches, a team of two or three weather personnel swings into action. Armed with a cellular phone, portable anemometer, still and video

cameras, special maps, and rain gauge (if needed), the team gives chase by vehicle.

While the experience is enough to fuel anyone's adrenaline, the exercise goes well beyond its thrill and exhilaration factor. Veteran Pat McCarthy puts things into perspective: "...the information chasers obtain has quite a significant impact on our understanding of how storms are formed." As chasers track the storm, they relay on-the-spot intelligence back to the Severe Weather desk, keeping a serious purpose in mind. He adds, "Our goal is to save some lives and get weather warnings out even faster."

Since the group's inception, the concept has spread like a prairie fire, with some ex-Dogs planning a new group in Saskatoon.

If the teams go cross-country, the Weather Dogs might have to get a new name. Still, they're willing to share expertise with other regions wanting to launch a storm chaser group. If you're interested in starting a similar undertaking, call Pat McCarthy, Prairie Weather Centre at (204) 983-8856.

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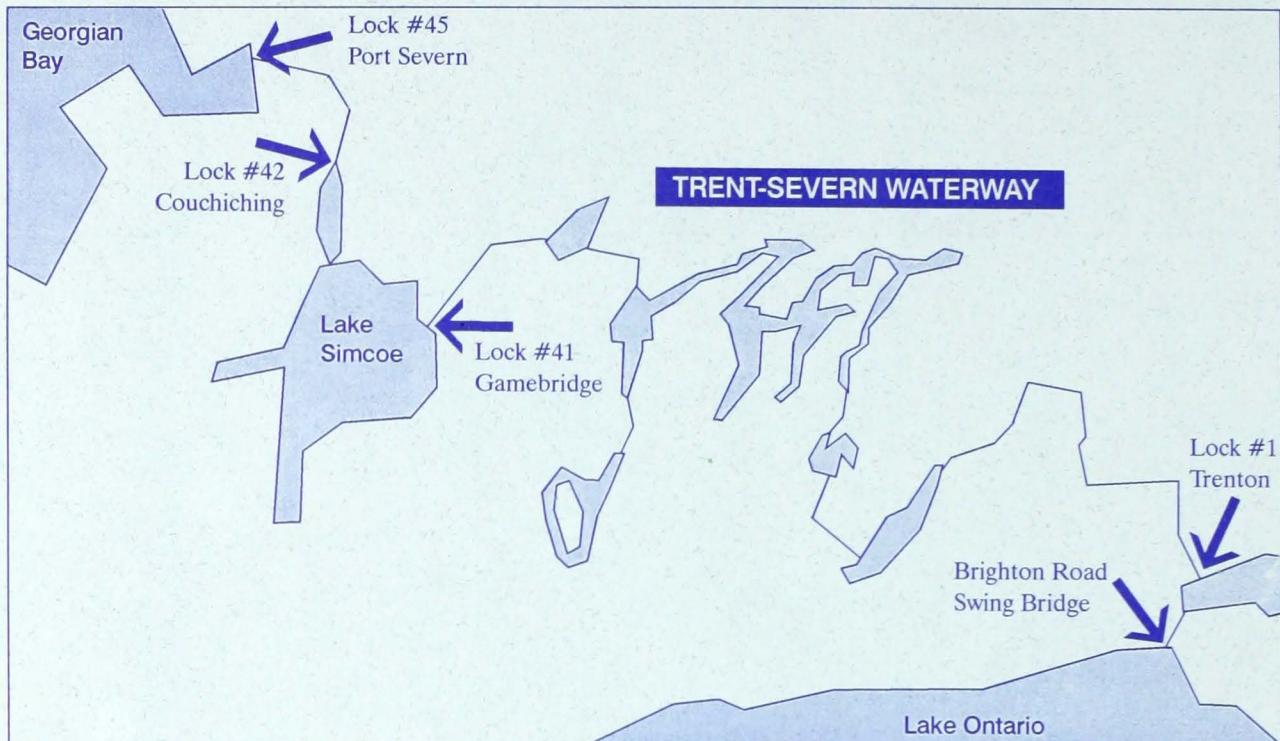
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Service through science



Electronic information signs installed on Trent-Severn Waterway



As the arrows indicate, electronic signs are installed at locations where the Trent-Severn Waterway meets larger bodies of water.

This summer, recreational boaters entering the Great Lakes and Georgian Bay will have the latest marine weather conditions thanks to Environment Canada's installation of electronic signs along the Trent Severn Waterway.

During the spring of 1991, Environment Canada recognized a need to ensure delivery of marine weather to the thousands of recreational boaters who leave the relatively sheltered canal to venture onto the larger bodies of water. Although a VHF-Weatheradio network and commercial radio outlets cover part of the canal system, the large numbers of small boats without any radio equipment were still unprotected.

In June, the electronic signs were strategically installed along the waterway to provide recreational craft owners with marine weather warnings,

weather information, environmental messages and operational information.

The messages are controlled by AES weather office staff at Peterborough and Ottawa and by Parks staff in Peterborough. The signs will operate through the daylight hours, seven days a week, for the entire season of the Trent-Severn Waterway.

Funded by the Search and Rescue Secretariat New Initiatives Fund, under the responsibility of the Minister of National Defence, this Environment Canada demonstration project is designed to determine whether such a system can improve boater safety and reduce search and rescue incidents.

The project will be monitored for the remainder of this season, and based on feedback from users, could be expanded to other historic waterways in Ontario.



Zephyr breezes

Yes, it was warmer this spring...

The national average temperature for spring 1993 was 1.2°C above the long-term mean, making the March, April and May period this year the 14th warmest since 1895. Over this 99 year period, Canada has experienced a spring-time warming increase of 1.3°C . In fact, eight of the last ten springs have been warmer than the long-term mean (Climatic Perspectives, May 1993).

AES scientists participate in Pacific '93

This summer, a group of 25 AES scientists will be travelling to the Lower Fraser Valley, not for a joint vacation, but to participate in Pacific '93 -- a field study on ground-level ozone.

Pacific '93 is the Environment Canada component of a larger air quality study, the Lower Fraser Valley Oxidant Study, in which the University of British Columbia, the University of Victoria, the Greater Vancouver Regional District (GVRD), B.C. Environment, York University, the National Research Council, Health and Welfare Canada, Agriculture Canada and the U.S. National Oceanic and Atmospheric Administration are all participating.

Bruce Thomson from Pacific region and one of the project's coordinators explains, "The whole study stresses the value of partnerships. It was only through the cooperation of all the agencies involved that the study became possible. The essence of the people participating really make it happen".

It is estimated that ground-level ozone, one of the main components of smog, causes an annual crop loss in

B.C. of \$8 million. The pollutant is also known to have adverse health effects on the respiratory system.

Emission reductions of the smog compounds, NO_x and VOCs, have become an important priority in the Green Plan, the CCME Management

"The whole study stresses the value of partnerships...The essence of the people participating really make it happen."

Plan for NO_x/VOCs and the GVRD Air Management Plan. In Canada, we are looking to reduce ground-level ozone concentrations to acceptable levels by the year 2005.

While emission reductions are expected to ease the ozone problem, scientific research is needed to confirm the target levels at which reductions will improve air quality.

One of the challenges facing researchers is that NO_x and VOCs react in unique ways with hundreds of other compounds in the atmosphere,

and only a small percentage of these reactions are known. As a result, there is considerable uncertainty when attempts are made to predict to what extent smog will occur.

Intensive measurements will be taken from July 15 - August 11 of the chemicals involved in the formation of ozone from surface sites, towers, balloons and two extensively instrumented planes.

"The measurements from Pacific '93," Thomson explains, "will be used to test whether computer models for the Lower Fraser Valley are giving good predictions for smog events, and if so, if it's for the right reasons."

He adds, "the study is expected to make a significant Canadian contribution to improving scientific knowledge of the atmospheric conditions that lead to severe ground-level ozone problems."

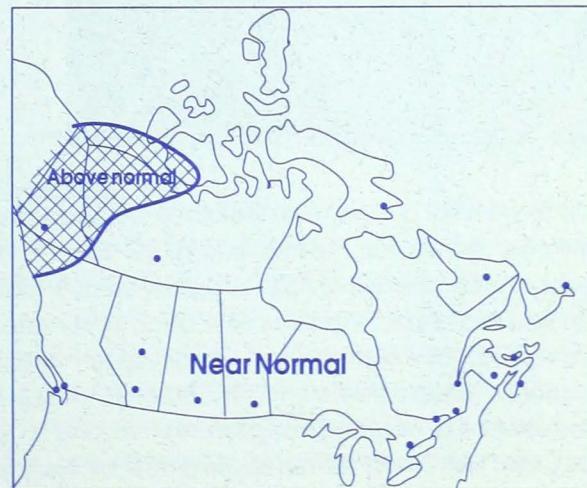
Knowledge gained from Pacific '93 will be instrumental for developing successful pollution prevention programs by providing a scientific basis for advice to environmental managers and administrators as well as air quality, transportation and urban planners.

Monthly temperature forecast

Normal temperatures for mid-July to

mid-August, °C

Whitehorse	13	Toronto	20
Yellowknife	15	Ottawa	20
Iqaluit	7	Montréal	20
Vancouver	17	Québec	18
Victoria	16	Fredericton	19
Calgary	16	Halifax	18
Edmonton	16	Charlottetown	18
Regina	18	Goose Bay	15
Winnipeg	19	St. John's	15



Working together for healthy air

Listen up! In addition to providing the UV Index and Ozone Watch, we have another new service — Smog or Air Quality Advisories.

Over the past several months, AES has worked with Health and Welfare Canada, the provinces, regions and municipalities to develop the Smog Advisory Program. As part of the Green Plan commitment to provide public advisories when pollution levels are high, the program was launched this spring in Ontario, New Brunswick, and southern British Columbia and may be launched in the Montreal area soon. These are the areas where smog levels are elevated most frequently.

Together with provincial counterparts, AES regions monitor and fore-



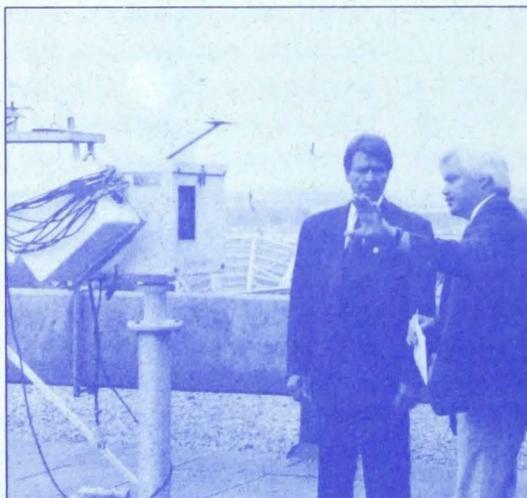
cast ground-level ozone. When the levels are forecast to be high, a joint Smog Advisory is issued by Environment Canada and the province, and is delivered with weather forecasts, to

the media and through other federal and provincial mechanisms.

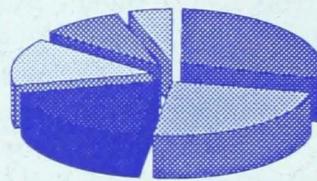
These advisories will encourage you to take action to prevent air pollution by suggesting alternative forms of transportation such as walking, cycling or using public transport. On June 15, the program was put into action as the Maritimes Weather Centre issued the first Smog Advisory, which generated a large number of calls to the Saint John Weather Office.

For further details on smog and the Smog Advisory Program in your area, contact your regional Environment Canada office for the pamphlet, "Working Together For Healthy Air."

Environment Minister visits AES



On July 19, AES Downsview welcomed Environment Minister Pierre H. Vincent (above left) as he toured the building for a first-hand look at AES's program components. His stops included a visit to the ozone rooftop observatory where Jim Kerr (above right) explained our ozone-monitoring instruments. Using satellite imagery, Bruce Findlay illustrated the science of climate change detection, and finally in the CO₂ lab, Neil Trivett demonstrated how air samples are collected from Canada's north.



EnviroMonitor

Focus: The ozone layer

This past year, Canadian concern over the state of the Earth's ozone layer rose significantly in all areas of the country. In fact, one in three Canadians (33%) cite ozone depletion as their central environmental concern.

Further research findings reveal that three-quarters of Canadians are concerned about the health risks associated with ozone depletion, while only one in four feel this problem has been exaggerated.

For example, British Columbia's unusually sunny summer of 1992 resulted in a 9 point increase in concern about the health implications of ozone depletion (pushing it to a national high of 81% considering these risks serious).

AES and the Green Plan



Supercomputer

March 15, 1993 - A new \$43.6 million supercomputer at the Canadian Meteorological Centre in Montreal was inaugurated. The supercomputer allows Environment Canada to increase the automation of routine weather forecasts and extend forecasts further into the future. It also provides improved prediction of severe weather events and other potential environmental disasters.



Improved UV Index Program

April 23, 1993 - In keeping with a Green Plan commitment to increase scientific research and monitoring efforts on ozone depletion and to provide Canadians with information about environmental risks to health, Canadians now receive a more accurate forecast of UV rays. Accuracy of the UV Index program has been increased through better methods used to forecast the thickness of the ozone layer.



Smog Advisory Program

May 17, 1993 - A federal-provincial smog advisory program was unveiled in New Brunswick and Ontario. In New Brunswick, the program will build on Saint John's existing Index of the Quality of Air Program (IQUA) and will mark the beginning of advisories in the southern part of the province. In Ontario, the advisories are based on the provincial air quality index forecast and focus on pollution prevention by urging Ontarians to "Spare the Air."



New Brewer installation

May 20, 1993 - Environment Canada has installed a Brewer spectrophotometer at Dorval, Quebec. The Brewer is one of the world's most powerful instruments for measuring UV intensity and recording changes in the ozone layer. This installation marks one of four monitoring stations established under the Green Plan. With the expanded network of stations, AES will be able to keep closer tabs on Canada's ozone layer.



Weather Services Office

June 3, 1993 - Environment Canada opened its first Weather Services Office in Kelowna, B.C. Located on the North Kelowna campus of Okanagan University College, the WSO will provide around-the-clock services such as weather and air quality forecasts, ozone and UV monitor-

ing as well as mountain meteorology to the interior of B.C. It will also house public information on other Environment Canada programs and services like the Environmental Citizenship initiative.

Another feature that makes the WSO different is that it was built with many environmentally-friendly features such as low-energy systems for heating and cooling; energy efficient lighting and water-conserving plumbing and irrigation systems.

The WSO is part of the Environmental Emergency Prediction and Warning initiative, a commitment in the Green Plan to provide the public with earlier detection and better prediction of severe weather and environmental hazards.



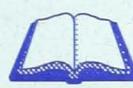
Smog Advisory Program

June 9, 1993 - A federal-provincial smog advisory program was unveiled in British Columbia. The Greater Vancouver Regional District (GVRD), the British Columbia Ministry of Environment, Lands and Parks and Environment Canada are working together to advise the public when high ground-level ozone concentrations are forecast.



Canadian Centre for Climate Integration and Prediction

June 24, 1993 - A new research centre dedicated to studying global warming and other climate issues will open in early 1994, fulfilling a Green Plan commitment to reduce the uncertainties surrounding global warming. The Canadian Centre for Climate Integration and Prediction, to be located at the University of Victoria, will mobilize research efforts through a Climate Research Network — a series of multi-sector, cross-country research groups that focus on various aspects of climate.



New Green Plan publication

A report highlighting Environment Canada's scientific and technological work to meet the environmental goals identified in the Green Plan is now available.

The report entitled, "Environmental Science and Technology - An Overview", shows the efforts that are underway across Canada to deal with issues as diverse as conserving our wildlife and national parks and developing innovative technologies to clean up polluted sites. Copies are available from Environment Canada's Enquiry Centre (819) 997-2800.

Have you heard the message?

Chantal Hunter

Environmental Citizenship is about becoming informed and getting involved. As you know, one way Environment Canada has achieved this goal is through the Environmental Citizenship Messages Program (ECMP), a Green Plan initiative put into action by AES's Weather Offices in February.

Since we last told you about the ECMP, the program has quickly gained momentum, with messages being heard by Canadians in many parts of the country.

AES Weather Specialists act as key players in disseminating the messages to Canadians on a daily basis via weather radios, radio and television media and weekly and daily newspapers.

Christine Hogan, AES Manager of the Environmental Citizenship Office, explains, "the pro-active response by the Weather Offices to engage the media in Environmental Citizenship has

been one of the key factors to the program's early success." "In particular," she adds, "the significant coverage received for the ECMP launch was the direct result of efforts undertaken by the Weather Offices to promote the program."

Media pick-up of the messages has been concentrated mainly in smaller communities, with the exception of some media partnerships in major centres such as Vancouver, Ottawa, Halifax, Calgary and Edmonton. To date, 167 radio stations, 12 television stations, 18 cable stations, 25 daily and 67 weekly newspapers are involved with the ECMP across Canada, with more being added all the time!

So far, the messages have highlighted a variety of environmental themes such as climate change, global warming, water conservation, waste reduction and smog reduction. In August, messages will focus on water conservation, ozone depletion,

waste reduction, and global warming and transportation.

Each Monday via DOTS, approximately 7,000 DOE employees also receive the five daily (Monday to Friday) messages. Many of you have contacted the AES Office of Environmental Citizenship to voice your comments and suggestions.



**Environmental
Citizenship**

Staff are invited to offer suggestions for future messages. Please forward your ideas to:

Sean Lynch
Office of Environmental Citizenship
Atmospheric Environment Service
Ottawa, Ontario
K1A 0H3
DOTS LYNCHS
Tel. (613) 947-1908

Environmental Citizenship in action

An "environmental citizen" is an individual or group of individuals that become knowledgeable about the environment and engage in responsible environmental decision-making and action. These are central to the achievement of "a safe and healthy environment, and a sound and prosperous economy", the goal of Canada's Green Plan.

Many AES employees are already environmental citizenship ambassadors in their own communities. This issue, we acknowledge the AES Environmental Citizenship success story of Cecilia Chang of AES Pacific Region.

Cecilia has been instrumental in "signing on" Vancouver's Chinese radio, television and newspaper media to the Messages Program. According to the 1991 census, the Chinese population in the Greater Vancouver Regional District represents 10.6% of the total population in the GVRD. It is by far the largest ethnic group in Vancouver. An unofficial survey indicated that a large number of the Chinese population has minimal knowledge of environmental issues due to the lack of access of information.

Since April 5, Cecilia has been delivering the Environmental Citizenship Messages to the Chinese communities. She says, "The Chinese media outlets are very receptive and enthusiastic about this Initiative and are willing to assist to make the program successful." "It was agreed," Cecilia adds, "that in order to get the messages across, the content has to be comprehensive, light-hearted to listen to, and have to carry the message 'what is in it for me or for my generation'".

What's in store for the future? If the Program continues to be successful, it is hoped that it can be expanded to other major Asian communities in Vancouver.

Do you know of any other individuals within AES who are examples of Environmental Citizenship in action? Are you aware of the accomplishments of a colleague, either at home, at work or in the community? If so, we would like to hear from you! Send your submissions to Zephyr and watch for our feature profile of AES environmental citizens.

AES international activities

This is the first of a series of articles that will provide information on AES's involvement in the international scene.

Science-policy linkage

AES staff have traditionally been prominent in international scientific efforts. In recent years, our scientists have been joined by policy experts in a variety of international negotiations on atmospheric issues such as ozone depletion and climate change.

In the spirit of this science-policy linkage, AMC recently approved a new strategic approach to managing international issues in AES. Identified in the approach are a number of priority areas for international negotiations such as climate change, ozone, air quality and data access.

The main hallmark of the approach is communication — making sure that AES managers, scientists and other "internationalists" have the information necessary to effectively advance our service, departmental and national priorities. The approach's key areas of concern include:

- the positioning of AES to exert influence on chosen issues
- maintaining flexibility
- using the proper international forums

To better understand this science-policy linkage in action, here's a summary of our delegation team's recent activities:

April

Dr. Dawson led a multi-department Canadian delegation to the Intergovernmental Meeting on the World Climate Program. The Canadian Climate Programme was well-represented by two AES staff, David Grimes and Dr. John Stone. The World Climate Programme was recognized as the scientific underpinning for the international policy effort of responding to climate change. The role of individual national climate programmes was also noted and those countries who don't already have such programmes in place were encouraged to do so. To this end, ADMA presented an overview of the Canadian Climate Program; a programme seen by many as a model worth copying.

May

Mike Hewson and Meilyn Faille of the International Issues Branch worked diligently to help stage the first meeting of the new IPCC Working Group III in Montreal. The Working Group is preparing an assessment of the economics of climate change and scenarios for future global emissions of greenhouse gases. After a lively workshop, a work plan was adopted that will keep a number of AES staff busy for a couple of years!

Are you interested in obtaining reports for any of these events? If so, contact the International Issues Branch in Ottawa (613) 947-1910.

AES's new way of doing business

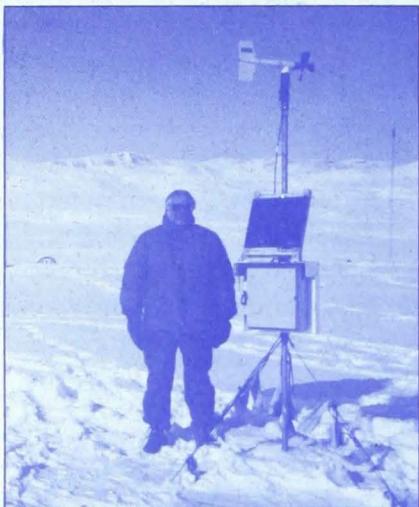


The Regional Director General of Atlantic Region, Des O'Neill (right) has reason to smile. Mr. Andy George, Officer in Charge of the Yarmouth Weather Office is shown presenting Des with the first, of what is hoped will be many, cheques from private sector partners. This cheque (\$500) is the first monthly payment from a Yarmouth automotive dealer for the privilege of having their 5 second advertisement carried along with the local forecast on the Yarmouth Weather Office ATAD (Automatic Telephone Answering Device). Congratulations to Andy for pursuing AES's new business philosophy — marketing and revenue generation.

With polar regards...

Kelly Reeve

On March 30, AES bid farewell to Dennis Stossel, a 35-year veteran of government service.



Dennis Stossel

Dennis' career began in 1958 as a meteorological technician on the Queen Charlotte Islands. From here, his career progressed to include 15 years at isolated weather stations (of which 10 years were

spent north of the Arctic Circle), followed by 17 years as Manager, Arctic Operations based in AES Winnipeg.

His duties required personal inspection trips every four months and annual operational planning teams to the Central Arctic and High Arctic Islands. But despite the rigours of northern travel and isolated postings, Dennis' enthusiasm and energy for the area always took precedence.

In his recent capacity as Special Advisor Polar Affairs, Dennis collaborated with colleagues, research scientists, and polar adventurers involved in Canada's North, including his last assignment to film the new Arctic Stratospheric Ozone Observatory near Eureka.

Among his other accomplishments, Dennis was the recipient of a Central Region Citation of Excellence, an AES Merit Award and a departmental Citation of Excellence.

We wish you the best, Dennis, in all your future endeavours — polar or otherwise.

Published four times a year by the Communications Directorate of Environment Canada, Zephyr is a staff newsletter for the employees of the Atmospheric Environment Service, Environment Canada.

Our mission is to provide quality service through science for the sustainable development of Canadians and our environment.

Zephyr is your newsletter... and we would like to hear from you.

Please forward your submissions for the Fall Issue by September 10, 1993. Visuals are more than welcome.

Claudia Del Col/Editor
ZEPHYR

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DOTS DELCOLC



On the move...

Assignment

Acedillo, M. from CCDG to Clim. Serv.
Info. CCID
Carlin, B.A. from MOC to METOC Halifax
Hamilton, J.A. from MOC to CFFC Greenwood
MacPhail, N. from Stat. Info. Mgmt. to Sup. Data Mgmt CCID
McDuff, J. from Van. W.S.O. to VanR/O Moreno, E. from AHRD to APEC
Murtha, J.M. from MWC Bedford to CFFC Edmonton

Sackiw, C.M. from MOC to CFFC Trenton

Stebelsky, R. to Secret. to Dir. AHRD
Tsang, D. to Comp. Prog. CCID
Walters, G.W. from PWC Vancouver to CFFC Comox

Retirement

Black, W. from Sydney
Carter, L. from MAEC, Bedford
Clermont, G. from Div. Meteorology and Oceanography, DND HQ
Collier, R. from M.W.C.
Edwards, F. from MAES, Bedford
Ellsworth, H. from MAEOI, Bedford
Friesen, B. from Met. Operations, Air Command HQ, Winnipeg
Maybroda, F. as W.O. Tech., Edson, Alta.

Reichheld, G.H. from CFWO CFB Shearwater, N.S.

Schmidt, A. as O.I.C. Prince Albert, Sk.
Stossel, D. as Polar Affairs Adv., RHQ Wpg.

Sutherland, A. from MAEWR, Bedford

Passings

Morgenstern, A. from AES HQ.
Simon, N. "Big Si" from Instr. Branch AES HQ

Promotion

Deptuch-Stapf, A. from Clim. Anom. Anal. to Head, Clim. Prods. Dev. CCID
Goessl, A. from AHRD to Head, Clim. Imp. & Issues CCID
Vigneault, L. from AHRO to NHW



A word from the editor

A new look for Zephyr

In case you haven't noticed, Zephyr has changed since the last issue in an ever-increasing effort to adopt a no-frills approach to publishing. Here's what we've done:

- Zephyr will now be issued seasonally, reducing the annual number of issues from six to four.
- Replaced the bleed in the previous Zephyr masthead with a screen, making the de-inking process easier and more economical.
- Preserved an environmentally-friendly design by avoiding gloss and glue, maintaining a standard paper size and reducing whitespace in the layout.
- Converted Zephyr from a three to one colour publication. We also changed the paper stock ensuring that it met Environmental Choice standards which stipulate that printing paper carry "over 50% by weight of recycled paper of which a minimum of 10% of the total weight must be post-consumer fibre".
- Added the Fax Back card to maintain an updated mailing list.

In the next issue...Look for the introduction of more feature columns.

FAX BACK

Tell us what you think!

Do you like Zephyr's new format? Send us your comments by faxing the Fax Back card to (416) 739-4235. If you do not have a facsimile machine, clip and mail the card to us.

My comments...



Are you not on our mailing list, moving or would like to adjust the number of copies you receive? If so, please provide any updated information in the space below.

Please adjust the number of Zephyr copies I receive.

I currently receive _____ copies and would prefer to receive _____.

Mailing address _____

Address label number: AE - _____