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JUNE 1975 JUIN

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AGRICULTURE ARCTIQUE

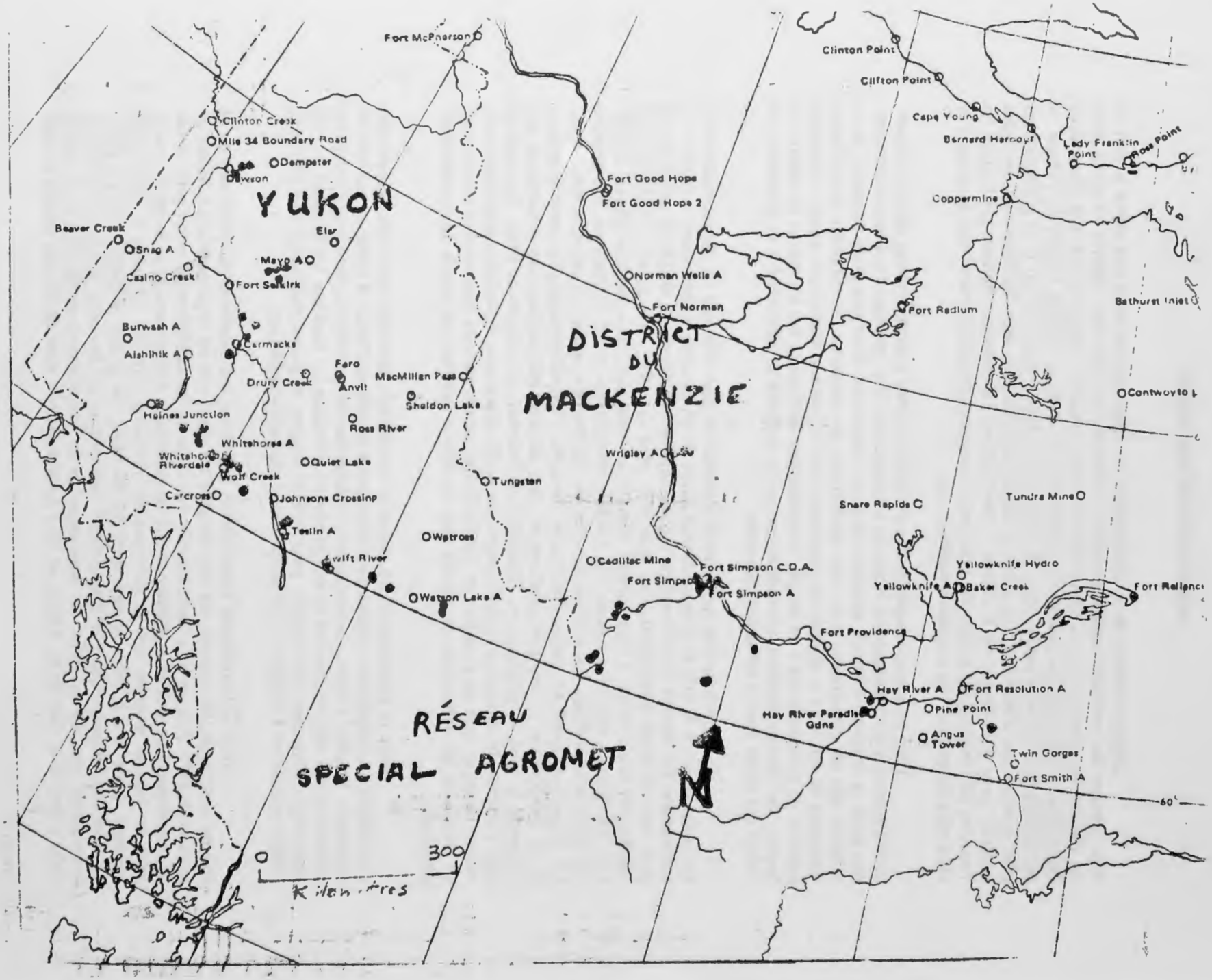
Depuis le début de la colonisation, les habitants du Nord ont relevé le défi de faire pousser des produits maraîchers dans l'Arctique. On a fait des cultures en serres dans les régions de toundra et on a démontré qu'il était possible, lorsque le sol et le climat sont favorables, d'exploiter localement de petites fermes dans les régions boisées de l'Ouest. Il est difficile de s'entendre sur la valeur de l'agriculture dans ces régions, car il est généralement plus économique d'importer des produits alimentaires du Sud. Mais l'homme a un penchant inhérent pour le jardinage ou la culture et les légumes ont toujours meilleur goût quand ils viennent directement du jardin. De plus, nombreux sont ceux qui pensent que le retour à la terre est synonyme d'une certaine qualité de vie.

Pour les raisons mentionnées ci-dessus et pour d'autres raisons encore, notamment l'essor de l'aménagement du Nord, on a assisté à une forte poussée des demandes de permis pour la création d'unités agricoles dans les Territoires. Pour que cette tendance ne se termine pas en catastrophe pour ces agriculteurs en puissance, le ministère des Affaires indiennes et du Nord a imposé un moratoire sur les permis relatifs aux terres à vocation agricole en attendant que l'on ait des connaissances suffisantes sur les sols et le climat. Le Service de l'Environnement atmosphérique a été consulté relativement à la définition du climat des terres dont le sol semble convenir.

La Direction des applications a dressé un plan d'études en collaboration avec les pédologues du MAIN et d'Agriculture Canada et on procède actuellement à sa mise en application. En résumé, le programme a pour objectif de fournir au MAIN, en temps voulu pour une décision ministérielle qui doit être prise en 1977, des cartes des possibilités climatiques relativement à l'agriculture. C'est à cet effet que l'on a établi un réseau compte tenu du climat à moyenne échelle. On a créé, à Whitehorse et à Fort Simpson, des groupes sur place pour installer des stations et collecter les données pendant la saison de croissance. Le réseau comprend 45 stations ordinaires équipées d'hygrothermographes pour la mesure de la température et des précipitations et cinq stations météorologiques mécaniques qui mesurent le vent, la température, l'humidité et l'intensité des chutes de pluie. Les stations sont réparties de manière à rendre compte du profil climatique de sections significatives de vallées. Lorsque cela est possible, on vérifie l'utilité de ces stations relativement à cet aspect en déplaçant les détecteurs. Le réseau sera en service pendant au moins deux saisons de croissance.

Pour la planification du réseau et la stratégie générale, on a tenu compte des évaluations des possibilités climatiques faites par Agriculture Canada à partir de modèles de régression. Pendant l'hiver, on procédera à l'évaluation des possibilités des terres à partir des données qu'on vient d'acquérir ce qui permettra d'évaluer les modèles. On étudiera de plus l'historique climatique de la région pour être en mesure de passer d'une analyse à moyenne échelle et à courte échéance, à une perspective à échéance prolongée.

Grâce à l'excellente planification logistique des membres du personnel de la Région de l'Ouest, les groupes qui ont travaillé sur place ont pu observer toute la saison de croissance 1975 bien qu'ils n'aient disposé que d'un temps extrêmement court pour lancer le programme. Les problèmes d'équipement, de personnel, d'hébergement et de déplacement dans les régions reculées, qui ne sont pas des moindres, ont été résolus à la satisfaction générale. C'est M F.J. Eley, ancien employé du SEA, qui a géré le programme sur place. L'intérêt enthousiaste que Joe Eley porte à l'agriculture sur les terres des zones limites de peuplement, son dévouement, ses connaissances du fonctionnement du SEA et le soutien qu'il a reçu à la fois de la Région et de l'Administration centrale lui ont permis de faire


YUKON
DISTRICT DU MACKENZIE
RÉSEAU SPECIAL AGROMET
Fort McPherson
Clinton Creek
Mile 34 Boundary Road
Dempster
Dawson
Beaver Creek
Snag A
Casino Creek
Elsa
Mayo A
Fort Selkirk
Burwash A
Carmacks
Aishihik A
Drury Creek
Faro
Anvil
MacMillan Pass
Sheldon Lake
Haines Junction
Ross River
Whitehorse A
Whitehorse Riverdale
Wolf Creek
Quiet Lake
Carcross
Johnsons Crossing
Tungsten
Teslin A
Watson Lake A
Swift River
Fort Good Hope
Fort Good Hope 2
Norman Wells A
Fort Norman
Wrigley A
Cadillac Mine
Fort Simpson C.D.A.
Fort Simpson
Fort Simpson A
Clinton Point
Clifton Point
Cape Young
Bernard Harbour
Lady Franklin Point
Cross Point
Coppermine
Port Radium
Bathurst Inlet
Contwoyto L
Snare Rapids C
Tundra Mine
Yellowknife Hydro
Yellowknife A
Baker Creek
Fort Reliance
Fort Providence
Hay River A
Fort Resolution A
Hay River Paradise Gdns
Pine Point
Angus Tower
Twin Gorges
Fort Smith A
60°
300
Kilometres
N

avancer le programme à un rythme qu'on n'aurait oser espérer. MM. Tom Detlor et Dave Gilbert, chefs d'équipe à Fort Simpson et à Whitehorse respectivement, assistent Joe avec beaucoup de compétence.

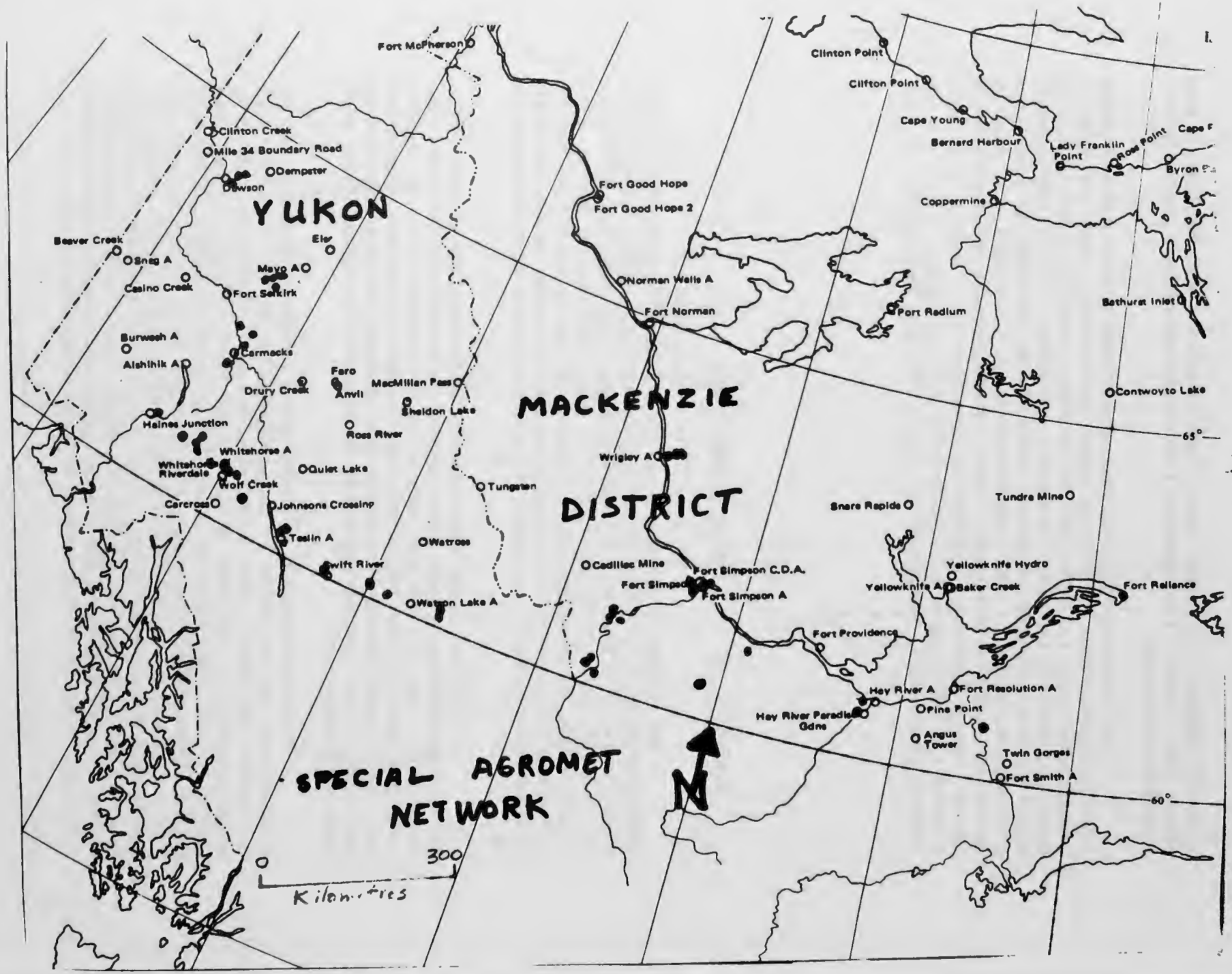
En octobre, les équipes sur place auront terminé leur travail et on procédera à l'évaluation des progrès effectués sans oublier que le MAIN a besoin des cartes des possibilités climatiques à la fin de l'été 1977. Le climat constitue un facteur fondamental dans la planification de l'utilisation des terres et, dans le Nord, il s'agit du facteur limitatif lorsque les sols conviennent à l'agriculture. Nous constatons avec plaisir que cette évidence a été reconnue. Cette étude permet également au SEA de montrer qu'il est en mesure de faire face à des besoins de planification d'urgence. Si nous sommes en mesure de fournir une réponse ferme et positive aux problèmes de l'agriculture dans l'Arctique, nous aurons contribué à l'amélioration de la qualité de la vie dans cette partie du Canada et à une meilleure acceptation de l'importance du rôle du SEA dans l'aménagement du Nord.

ARCTIC AGRICULTURE

The challenge of gardening in the Arctic has tempted northerners since the beginning of settlement. Greenhouse culture has been practised on tundra areas, while in the warmer, forested areas to the west, small farms have been demonstrated to be possible on a local basis given suitable soils and climate. The value of agriculture in these areas is a disputed subject, the economics generally favouring the importation of food from the south. But people have an inherent interest in gardening or farming, vegetables are always tastier right out of a garden, and quality of life for many people means returning to the soil.

For the foregoing and other reasons such as accelerating northern development, there has been a rapid up-surge in the request for permits to establish agricultural units in the Territories. To ensure that this trend does not lead to catastrophy for many would-be farmers, the Minister for Indian and Northern Affairs has placed a moratorium on agricultural land permits, pending adequate knowledge on soils and climate. The Atmospheric Environment Service has been approached concerning the definition of the climate of lands which appear to have suitable soils.

Working collaboratively with DINA and an Agriculture Canada soils specialist, an investigative plan was devised by the Applications Branch. This is presently being implemented. The objective, in brief, is to provide DINA maps on the climatic capability for agriculture in time for a Ministerial decision in 1977. For that purpose a network which would reflect meso-scale climate was derived. Field parties were established at Whitehorse and Fort Simpson to install the stations and collect data during the growing season. The network consists of 45 ordinary temperature and precipitation stations with hygrothermographs and five mechanical weather stations which measure wind, temperature, humidity and rate of rainfall. The stations are so located to reveal the climatic profile of pertinent valley sections. Their utility in that regard is being verified where possible by moving sensor techniques. The network will be in operation for at least two growing seasons.


YUKON
MACKENZIE
DISTRICT
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NETWORK
300
Kilometres
N
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Angus Tower
Twin Gorges
Fort Smith A
Port Radium
Bathurst Inlet
Contwoyto Lake
Coppermine
Clinton Point
Clifton Point
Cape Young
Bernard Harbour
Lady Franklin Point
Rose Point
Byron
65°
60°

Planning of the network and general strategies took advantage of climatic capability estimates based on regression models and provided by Agriculture Canada. During the winter months, the newly acquired data will be evaluated in terms of land capability thereby providing a means of evaluating the models. In addition, the climatic history of the area will be probed so that the short-term meso-scale analysis can be put into a longer-term perspective.

The excellent logistical planning by staff in the Western Region enabled the field parties to observe the complete 1975 season despite a very short lead time. Equipment, personnel, lodgings, movement in remote areas, all difficult problems, were successfully overcome. The field program is being managed by F.J. Eley who was formerly with the AES. Joe Eley's enthusiastic interest in frontier agriculture, his dedication and knowledge of AES's operations, along with back-up from both the Region and Headquarters has enabled the program to advance at a scarcely-hoped-for rate. Joe is ably assisted by crew captains, Tom Detlor and Dave Gilbert in Fort Simpson and Whitehorse, respectively.

The field parties will be disbanded in October and progress evaluated, having in mind that maps of climatic capability must be available to DINA by late summer of 1977. Climate is a basic factor in land-use planning, and in the north it is the limiting factor provided suitable soils exist. We are pleased to see this pertinence is recognized. Also, the the study provides an opportunity for AES to demonstrate its ability to react to urgent planning needs. A positive, vigorous response to the problem of Arctic Agriculture should lead to both a better quality of life in the Arctic and an improved acceptance of the major AES role in northern development.

FOREST FIRE WEATHER MODIFICATION EXPERIMENT – YELLOWKNIFE N.W.T.

Beginning July 14, the Department of the Environment and the National Aeronautical Establishment of the National Research Council with the cooperation of the Department of Indian and Northern Affairs undertook a two-week experimental weather modification project near Yellowknife, N.W.T. This research program, was ultimately aimed for forest fire suppression by inducing precipitation, using cloud seeding techniques, from cumulus clouds which drift over large forest fires.

The two-week project, carried out within 150 mile radius of Yellowknife, involved some 18 research and technical staff members of the Atmospheric Environment Service, the Canadian Forestry Service and the Flight Research Laboratory of the National Aeronautical Establishment.

This weather modification experiment was designed to take a first hand look at the potential for using cloud seeding techniques to induce showers during the season of high forest fire hazard. No appreciable change in general rainfall in the Yellowknife area is expected from the two-week experiment aimed at seeding from 5 to 20 cumulus cloud targets.

A standard procedure was to be used for all experimental flights. After a suitable cloud had been selected for modification, the NAE Twin Otter aircraft would penetrate this cloud making extensive observations to determine its microphysical structure prior to modification. Shortly thereafter, an NAE T-33 aircraft would penetrate the cloud near its top and seed with pyrotechnic flares releasing silver iodide. The Twin Otter aircraft would then monitor the cloud structure with special nuclei and meteorological measuring equipment to determine the physical changes induced and to measure any rain which may have formed. The operations were carried out mainly during daylight hours.

It is expected that the observations obtained during this brief experiment would provide an insight into the physical processes involved in the formation of rain and the degree to which these processes may be enhanced by cloud seeding. Cloud Physics Research Scientific and technical staff will assess the information to determine the effective use of weather modification techniques in the control of forest fires, especially as applied to the Canadian forestry areas.

Each year in Canada, on the average, 2 million acres of forest are burned over by forest fires. While airborne and ground fire-fighting techniques are able to deal effectively with many of these fires, much of the damage is caused by relatively few large forest fires. These large forest fires cannot be readily controlled by conventional techniques.

The artificial inducement of rain showers by cloud seeding techniques may offer a means of dealing with such fires since even a modest natural shower can yield in in excess of a million gallons of water in twenty minutes or less. By comparison, the capacity of a Canso water bomber used for forest fighting is 800 gallons.

CLIMATIC TRENDS IN THE NORTHERN HEMISPHERE

by W.S. Harley and T.E. Jakobsson

Considerable publicity has been given to recent unusual climatic conditions and their effects on food production. The drought in the Sahel region of North Africa and the poor crop year of 1972 in Canada are cases in point. Some reports have even gone so far as to suggest the possibility of a new Ice Age in the not too distant future. Here at AES, a study is underway to determine from observations the nature of recent climatic fluctuations over the Northern Hemisphere.

This short paper is concerned with some of the results so far obtained using Northern Hemisphere 1000-500 mb thickness data for the 25 year period: 1 January 1949 – 31 December 1974. The data is available on a 5° latitude – 10° longitude grid extending from 25N latitude to the Pole, except that data are missing from the area of the Pacific Ocean prior to 1964.

Mean thicknesses have been obtained for successive five year periods to determine the nature of the temperature trends from one period to another. Figure 1, for example, shows the areas in the Northern Hemisphere where there has been persistent cooling during the 20 years from 1949 to 1968. Of particular interest are the two areas on the eastern coastal regions of the Asian and North American continents.

A similar chart for the 25 year period 1949-73 shows little change in the persistent cooling areas in eastern and northern Asia. The other areas disappear, except for two small ones in southern Ontario and off West Africa. The reduction in the size of these areas indicates that a warming trend began in these areas subsequent to 1968. It is of interest to note that the largest areas of cooling shown in Figure 1 occur in the mean long wave trough positions on the eastern seaboards of the Asian and North American continents. No areas were found of persistent warming throughout the whole 25 year period.

The nature and extent of these cooling trends were investigated using weighted 5 year running means of 1000-500 mb thicknesses. The curve for Hatteras in the area of cooling on the east coast of North America shows a strong mean temperature decrease of 0.72°C between 1949 and 1969 followed by a sharp rise of 0.50°C in the next five year period. The curve for the grid point at 50N 110E near Ulan Bator in the area of cooling on the east coast of Asia shows the strongest and most continuous cooling anywhere in the northern hemisphere north of 25N, (the southern limit of our data base), viz: 1.69°C, more than twice the cooling found in southern Ontario. Other grid points surrounding Ulan Bator showed only slightly less marked cooling trends. The minimum on the curve appeared to be either at or very close to the end of the period. At higher latitudes the minimum on the mean temperature curve occurs earlier, for example, in 1963 at 80N 90E. Here, the mean temperature between 1949 and 1963 showed a decrease of 1.89°C, and this was followed by a rise of 0.97°C in the next ten years. The mean temperature tendency curve at the grid points in North Africa just north of the drought ridden Sahel region, on the other hand, remained fairly steady between 1949 and 1965, but this was followed by a spectacular rise of 2.36°C in five years.

The large number of mean temperature trend curves so far examined suggest the presence of a hemisphere wide temperature fluctuation, the minimum of which occurs at different times in different locations.

To investigate mean temperature trends in the northern hemisphere in greater detail, the time series of mean grid point thickness values were obtained for the period 1949-74. The annual cycle was removed from the thickness time series using 12 month moving averages. This process was carried out for all grid points in the Northern Hemisphere north of 25N. The trend in the mean temperature for a given grid point was obtained by fitting a quadratic polynomial to the time series of weighted moving averages by the method of least squares. An example of the trend curve of the grid point 50N 110E near Ulan Bator, in eastern Asia, is given in Figure 2. The actual data values for the time series indicate a minimum at December 1971 followed by a slow rise. No curve has been found where the temperature trend is downward at the present time. Instead, the data analysed to date indicates that the mean temperatures in the lower to middle troposphere over the Northern Hemisphere was decreasing generally prior to the 1963-69 period, but that, since then, the trend has been generally upward. Talk of a new Ice Age appears to be premature.

The fluctuating time series shown in Figure 2 combines the trend in thickness values, with relatively long term oscillations about the trend curve. The cause of these oscillations is the subject of a future study.

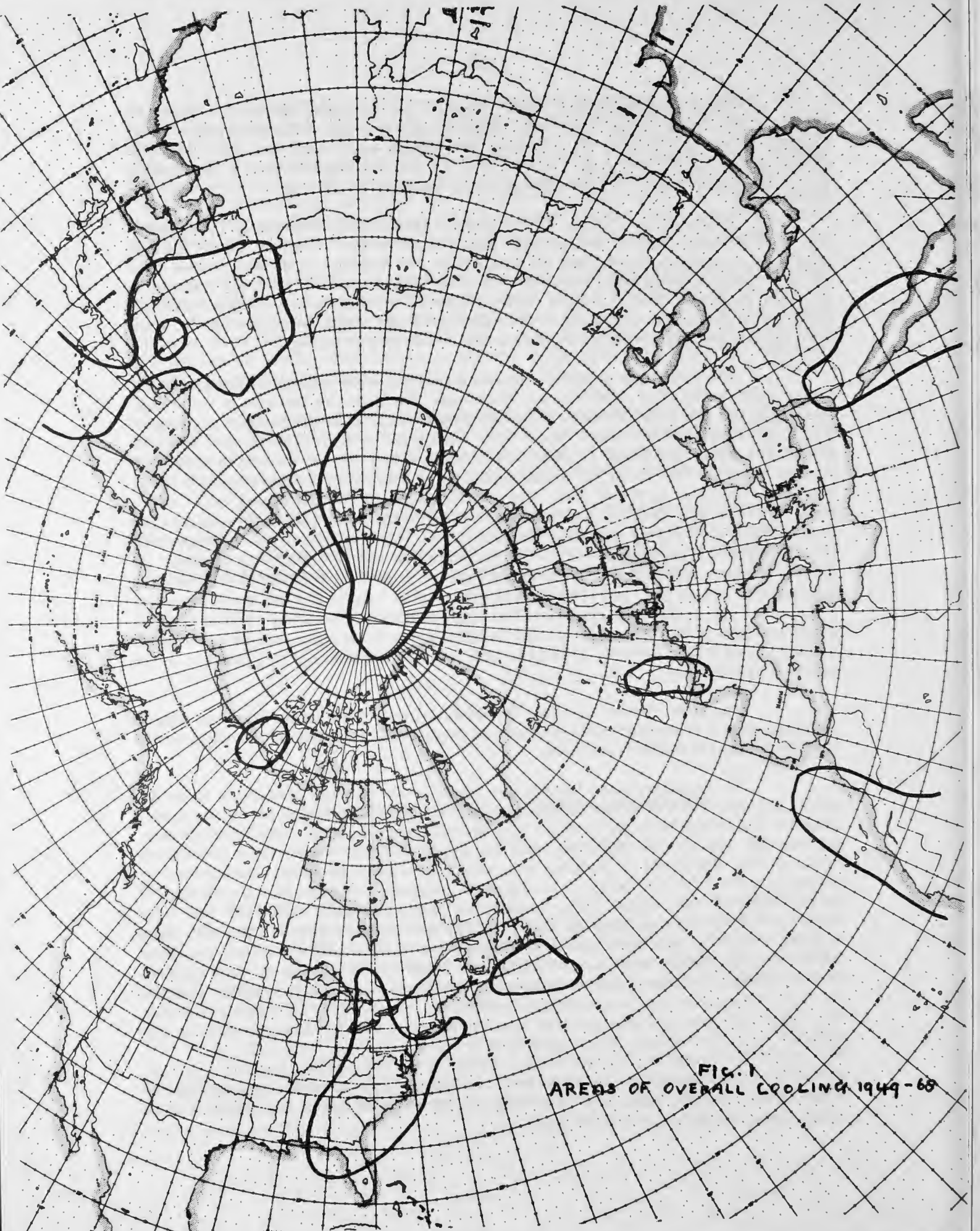


FIG. 1
AREAS OF OVERALL COOLING 1949-68

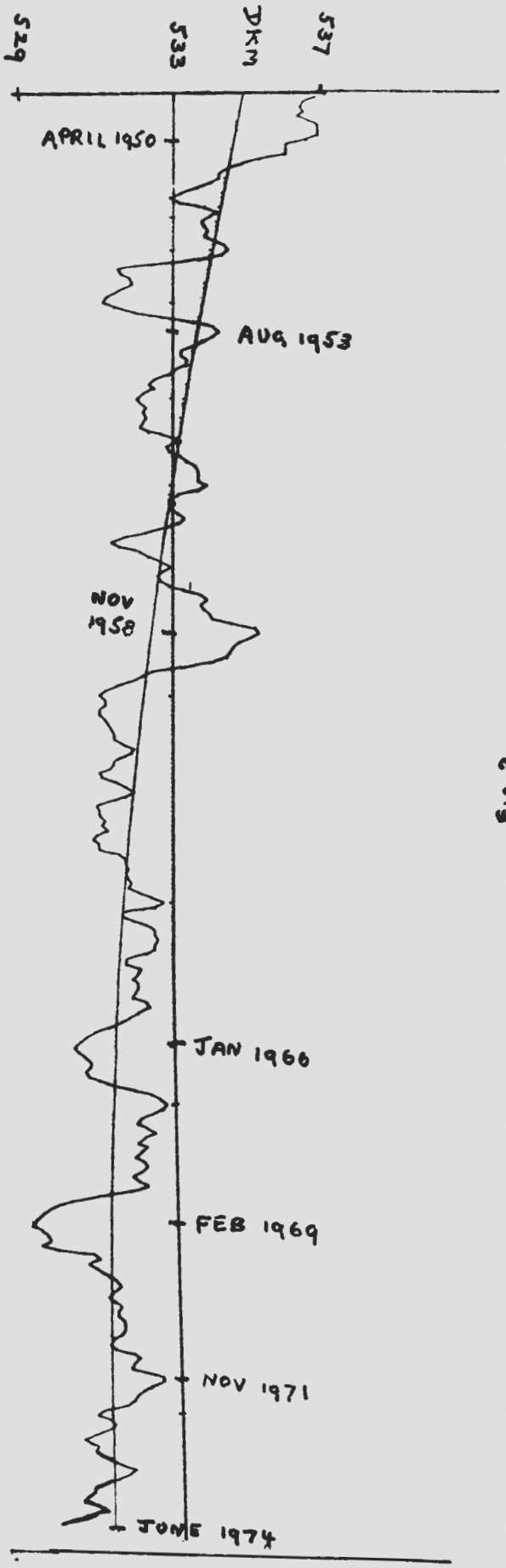
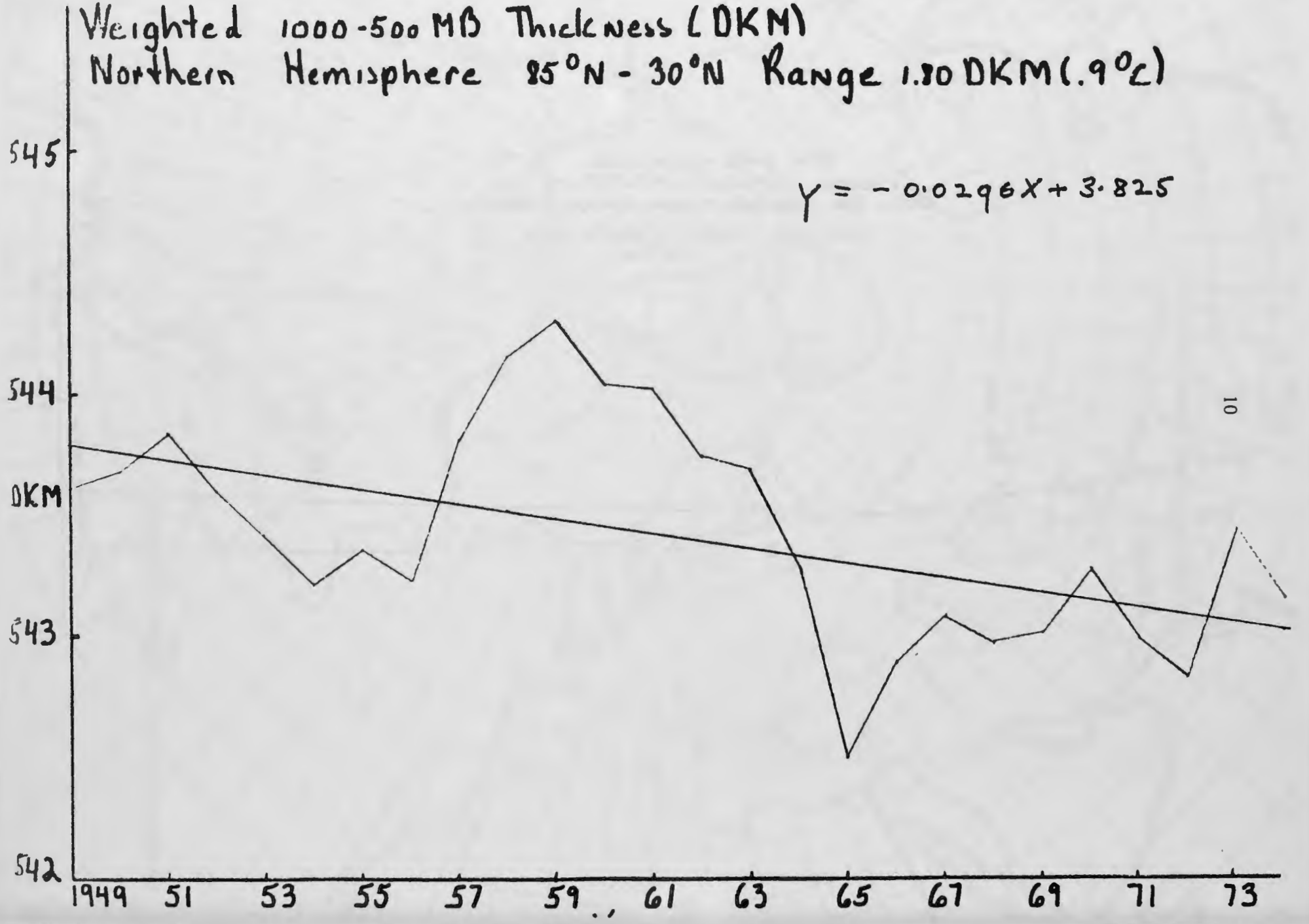


Fig. 2.
1000 - 500 MB THICKNESS JON 110E
12 MONTH CENTRED MOVING AVERAGES AND TREND
$H = 534.916 - .02794X + .00005X^2$
JULY 1949 - JUNE 1974

FIG. 3


Weighted 1000-500 MB Thickness (DKM)
Northern Hemisphere 85°N - 30°N Range 1.80 DKM (.9°C)
Y = -0.00296X + 3.825
545
544
DKM
543
542
1949
51
53
55
57
59
61
63
65
67
69
71
73
10

The monthly running means of mean temperature of the type shown in Figure 2, also show that the minimum on the trend curves occurs at different times in different latitudes and longitudes, just as in the case of the curves of annual running means. The evidence to date suggests the tentative conclusion that this mean temperature minimum occurs earlier from south to north and from east to west, except in the extreme south, but no explanation of this phenomenon can be given at this time.

Figure 3 shows a graph of the 1000-500 mb thickness for the period 1949-1974 averaged over the whole Northern Hemisphere north of 30N. It can be seen from this figure that while the mean temperature trend shown by the regression line is distinctly downward, it is evident that a slow upward trend in the mean tropospheric temperature began in 1965, following a sharp decrease between 1959 and 1965. This upward trend reflects the general upward trend shown in individual mean temperature curves in many parts of the hemisphere. The striking decrease in mean temperature between 1959 and 1965, which amounted to 0.90°C, may have been what stimulated the prophecies of gloom and doom concerning the approach of another Ice Age of which we have been hearing recently. Our data demonstrate the variability of climate on relatively short time scales. But the possibility of other and perhaps more severe climatic shifts, which would have important effects on the global economy and food production, has not been demonstrated.

COMPUTER APPLICATIONS FOR TECHNICIANS – COURSE NO. 1

A first course for Meteorological Technicians in meteorological computer applications was held at AES Headquarters, June 9-13, 1975. This course was presented by Professional Development Division in co-operation with Technical Training Division Training Branch. The ten participants represented Western and Central regions as well as the Canadian Meteorological Centre.

This course was in response to a growing need for qualified meteorological technicians with some training in computer methods, as a direct result of the installation of dedicated mini-computers at the major forecast offices. The course, an abbreviated version of the introductory Computer Applications to Forecasting course given to meteorologists, had the following objectives:

1. To provide some working knowledge of solving meteorological problems by computer methods using the FORTRAN programming language.

2. To provide an overview of the current and future operational applications of computers in the AES.

3. To provide some actual "hands-on" experience with computer related activities for technicians.

Front Row: (Left to Right) T. White (Course Director, Technical Training Division), G. Langevin (Wes), D. Duriez (Wes), J. Mullock (Wes), G. Burridge (CMC), A. Mistal (Cen), M. Balshaw (Chief Instructor, Professional Development Division).
Back Row: (Left to Right) J. MacDuff (Cen), R. Melick (Wes), T. Eliopoulos (CMC), H. Alleyne (CMC), M. Degrosbois (CMC).

Courtesy G.M. (Bill) Kiely

The response of the participants to the course was good. Suggestions solicited from the participants for future courses indicated that it should be expanded to include programming in other areas such as vorticity and Hovmöller diagrams. It is hoped that an expanded and improved computer applications course could be integrated into the training of operations technicians.

ASSESSMENT OF RECREATION AND TOURISM WEATHER SERVICES IN CANADA

by D.J. Phillips

During the past several months I have had the opportunity as Recreation and Tourism Weather Service Meteorologist in FSD to visit all regional offices, including most of the main Weather Offices across Canada. The purpose has been to assess the present services being provided to users in the area of Recreation and Tourism with the intent of identifying present services and deficiencies in these services.

Discussions held with AES personnel in the field and a variety of users representing private organizations and governmental departments demonstrated that in the areas such as recreational boating, skiing, parks and special events there is indeed a need for services either through an adaptation of the public forecast or the development of new products within the Public Weather Service.

At the present time every region is carrying out at least one forecast program in support of recreation and tourism. For example, in the Pacific Region the Vancouver Weather Office issues a special recreational boating forecast for the Vancouver area and provides a specialized forecast service to the ski operators in the Vancouver area, in addition to a general skiing forecast for the public. The Regina Weather Office, for the second year, is adapting the public forecasts for the Saskatchewan provincial parks. The Winnipeg Weather Office is providing recreational boating forecasts for Lake Winnipeg and the Whiteshell area, while the Toronto Weather Office prepares a special inshore forecast forthe Great Lakes and Lake Simcoe for recreational boating. The Montreal Weather Office prepares a similar forecast for Lac St. Louis and Lac St. Jean. In the Atlantic Region there are plans to issue special forecasts for the Bras D'Or lakes this summer through the Sydney Weather Office.

Programs of these types are serving as a basis on which to expand services of a similar nature into other areas in Canada and into other activities. In the near future it is hoped that extended range forecasts of up to five days will become operational and provide a more diversified service.

For recreational boating a good start has been made in providing services in many of the important recreational boating areas, in response to the particular needs of the region. These services will undoubtedly be expanded with the WO4s becoming more involved. In other areas such as for skiing, parks (national and provincial) and special recreational and results of pilot projects which have been set up to evaluate the effectiveness of specialized weather services.

It is important to emphasis that the role of the WO4 and of meteorological technician in the provision of the specialized services is expected to expand. In many instances the smaller offices can provide the needed direct contact with the user which is not always possible through the major Weather Office or the WO1. In light of the changes and particularly because of regional differences it will be necessary to review the program for the provision of services to recreation and tourism so that we do not find ourselves failing to respond to a demand for services or providing a service which is no longer required.

ÉVALUATION DES SERVICES MÉTÉOROLOGIQUES POUR LE TOURISME ET LES LOISIRS AU CANADA

par D.J. Phillips

Mes fonctions de météorologiste au service météorologique pour le tourisme et les loisirs de la Direction générale des services extérieurs m'ont permis de visiter, au cours des derniers mois, tous les bureaux régionaux y compris la plupart des principaux bureaux météorologiques du Canada. Il s'agissait d'évaluer les services actuellement offerts aux usagers dans le domaine du tourisme et des loisirs afin de déterminer quels sont actuellement ces services et les lacunes qu'il. y a à combler.

Les discussions, qui ont eu lieu avec des membres du personnel du SEA sur place et divers usagers représentants des organismes privés et des ministères publics, ont montré que, dans les domaines comme la navigation de plaisance, le ski, ies parcs et les manifestations spéciales, il faut vraiment offrir des services soit en adaptant les prévisions destinées au public, soit en créant de nouveaux produits au sein du Service météorologique public.

Chaque Région exploite actuellement au moins un programme de prévision pour le tourisme et les loisirs. C'est ainsi que dans la Région du Pacifique, le bureau météorologique de Vancouver diffuse une prévision spéciale pour la navigation de plaisance dans la région de Vancouver et assure un service de prévision spécialisée aux promoteurs de sports d'hiver de la région en plus des prévisions générales pour le ski destinées au public. C'est la deuxième année que le bureau météorologique de Régina adapte les prévisions publiques pour les parcs provinciaux de la Saskatchewan. Le bureau météorologique de Winnipeg assure des prévisions pour la navigation de plaisance sur le lac Winnipeg et dans la région de Whiteshell, tandis que le bureau météorologique de Toronto établit des prévisions spéciales pour la navigation de plaisance sur les Grands lacs et le lac Simcoe. Le bureau météorologique de Montréal établit des prévisions du même type pour le lac St-Louis et le lac St-Jean. Dans la Région de l'Atlantique, on envisage de diffuser, pendant cet été, des prévisions spéciales pour les lacs du Bras d'Or par l'intermédiaire du bureau météorologique de Sydney.

Les programmes de ce genre serviront de base à l'expansion de services du même genre dans d'autres régions du Canada et pour d'autres activités. On espère être en mesure d'exploiter, dans un avenir rapproché, des prévisions à période prolongée jusqu'à cinq jours et d'être en mesure d'assurer un service plus varié.

Pour la navigation de plaisance, on a commencé par assurer des services dans bon nombre d'importantes régions pour la navigation de plaisance pour répondre aux besoins particuliers de la région. Ces services seront certainement étendus lorsque les VO4 s'en occuperont davantage. Dans les domaines des sports d'hiver, des parcs (nationaux et provinciaux) et des manifestations sportives et de loisirs spéciales, des services se développeront en fonction de la demande et des résultats des projets pilotes qui ont été mis en place pour évaluer le rendement de services météorologiques spécialisés.

Il est important de souligner que le rôle des VO4 et des techniciens en météorologie dans la prestation de services spécialisés est censé s'étendre. Dans bien des cas, les petits bureaux peuvent assurer le contact direct indispensable avec les usagers qu'il n'est pas toujours possible d'établir au niveau des bureaux météorologiques principaux ou des VO1.

A la lumière des modifications et particulièrement en raison des différences régionales, il faudra revoir le programme de prestation de services pour les loisirs et le tourisme pour éviter de ne pas répondre à une demande de services ou de fournir des services qui ne sont plus utiles.

NATIONAL COASTGUARD DAY

A successful National Coastguard Day was held at Windsor the weekend of June 7-8, 1975. In addition to the presence of five Coastguard Vessels and shore displays the AES was invited to attend and participate as in past years. The AES booth was manned by R.D. Hall and G.T. Meek of Ont. Region.

National Coastguard Day Lineup.

AES Participation in National Coastguard Day.

ARCTIC WINDMILL HAILED AS REVOLUNTIONARY ROBOT

by John McManus, Winnipeg Free Press

Some time in the late fall, pilots flying over the ice islands in the Beaufort Sea will see a machine planted in the pack-ice that looks as if it started out to be a windmill and grew up to resemble an egg-beater.

The device is in fact, a distant cousin of the windmill. In spite of its apparent simplicity, it is expected to have a revolutionary impact on everything from weather data collection to pipeline transmission and marine safety.

Harry G. Sevier, head of the vehicle design rocket and space division of Bristol Aerospace of Winnipeg in an interview described the wind-powered turbine and its maiden task and trial run on the near side of the North Pole, using the generic term windmill.

"Five years ago, when you talked about windmill power, people thought you were odd. Now the power crisis has brought it into a circle of scientific respectability," he said.

The windmill Bristol built is calculated to blend the principles of an antique power source with space age technology.

In short, it will provide continuous power for an unmanned weather station.

That's the short version.

Bristol already is in jet overhaul and manufacturing airline components and designs systems for nuclear power stations, as well as building research rockets being used all over the world – so why not something that can be referred to simply as a windmill?

The Bristol windmill and the demands on its design and operation may well be the biggest challenge the Winnipeg company has faced.

The space division chief said the company became involved in wind-power turbine development last fall. It is working on design and production of a range of ground-station data-transmitting devices, as an extension to its experience in rocket telemetry systems.

Its developments have led to a contract from the Canadian Atmospheric Environment Service (the weather office) to design and build a prototype automatic weather station to be installed on an ice island in the Beaufort Sea.

Since the installation called for a six-month unattended operation (and this meant an excessive number of storage batteries), Bristol elected, with AES support, to use wind-power to keep the batteries charged.

Mr. Sevier said the company chose to use a vertical-axis concept pioneered by the National Research Council.

He cited five reasons in support of the concept – existence of a sound technical base, its simplicity (which will allow two men to erect the equipment on the ice) and its compactness (the unit will have to be flown, along with all other sea stations components in a single Twin Otter aircraft).

The windmill is also built to face winds up to 100 m.p.h. It can be produced for about $115,000, and tests have shown it has high reliability.

The role of the power-generating machine will be to keep its companion weather data station in constant operation.

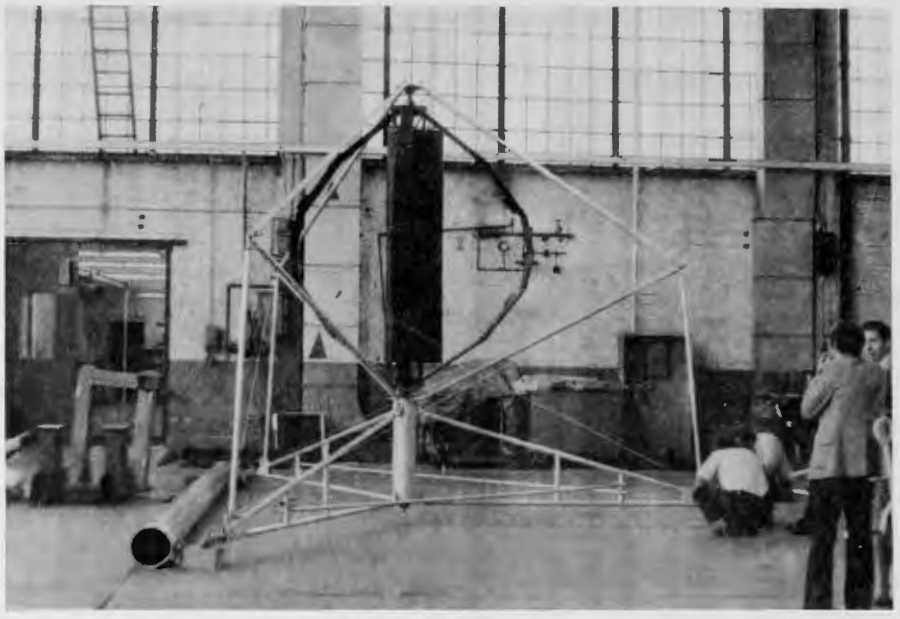
The search in the Arctic for ice-locked fossil fuel has created a need for regular and accurate weather forecasts that now are beyond the reach of the long-established weather stations of the lower Arctic.

The Bristol spokesman pointed out that the Beaufort project is one of many financed by oil companies.

How the weather data will reach northern exploration companies and other users is a saga in itself.

From windmill Beaufort, the data station will send out weather conditions every three hours to a satellite over the equator, 23,000 miles from icecap.

The satellite will relay the message to a centre near Washington, D.C. and on to Toronto. Then the information will go by teletype to Edmonton and be broadcast to the North.



Arctic Windmill

Pushing out an ultra high frequency (UHF) signal, the weather cycle will be completed every half hour.

Bristol had some help when it encountered a conflict in the wind speed needed to overcome the generator field current and transmission static friction. It solved the problem with a unique direct-drive alternator which happened to be under development at the University of Manitoba.

Mr. Sevier sees all kinds of possibilities for windmills of various sizes – all the way from monitoring pipeline flows, powering water buoys and possibly even providing electricity for homes.

The Winnipeg windmill is based on the idea of two research council scientists, and the U.S. has also picked up the idea.

The Bristol engineer said: "Bristol is the first to design one as a real tool for a specific use."

DISCOURS PRONONCÉ

par R.J. Fichaud

Directeur régional du Service de l'environnement atmosphérique,
Région du Québec, à l'occasion de l'ouverture officielle
du nouveau bureau météorologique de Sherbrooke,
le 27 juin 1975

Presque tous les pays du monde ont leur propre service météorologique national.

Les services météorologiques des pays sous-développés sont surtout à l'état de l'acquisition des données de base, tandis que les pays hautement développés, comme le Canada, offrent toute la gamme des services, tels que: climatologie, données courantes, prévision, consultation, services aux usagers, instrumentation, recherche, etc.

Le Service météorologique du Canada date de plus de 100 ans. En effet, nous avons célébré notre centenaire en 1971. L'année 1971 marque aussi la séparation du Service Météorologique du Canada du Ministère des Transports avec lequel nous avions plus ou moins grandi durant les 35 à 40 ans qu'a duré cette association. Notre croissance et développement ont donc suivi de près celui de l'aviation et notre Service en a été marqué d'une façon assez directe. Notre présence à presque tous les aéroports témoigne de cet héritage du Ministère des Transports.

Donc, en 1971 nous avons été projetés avec d'autres composantes fédérales, telles que celles des forêts et des pêches, pour former un nouveau ministère, celui de l'Environnement, avec des objectifs, des priorités, des traditions, des missions et des organisations très différents de ceux du Ministère des Transports et nous sommes encore en train de nous adapter à ces changements. Un de ces changements affecta le nom de notre organisation qui est passé de *Service Météorologique du Canada à Service de l'environnement atmosphérique.*

Un autre changement qui s'avère très difficile à effectuer d'une façon générale à travers le pays, est celui de se divorcer de notre association exagérée avec les aéroports. Et c'est ici que le Bureau météorologique de Sherbrooke est appelé à jouer un rôle primordial au Canada. En effet, c'est le premier Bureau météorologique de service à être localisé dans un centre-ville et notre expérience à Sherbrooke au cours des prochaines années sera surveillée avec beaucoup d'intérêt par les gens de la météorologie au Canada.

Le rôle d'un bureau comme celui-ci est tellement lié à desservir le public et les autres usagers plus spécialisés que même l'endroit où il est situé est d'importance capitale. Et c'est la raison du changement qui se formalise aujourd'hui. En effet, même si le Bureau météorologique de Sherbrooke existe depuis environ 3 ans dans le Centre-ville, le site précédent, sur la rue Belvedère était loin d'être idéal du point de vue "visibilité" au grand public et donc aussi du point de vue "disponibilité" envers le public. Non seulement la rue Belvedère où nous étions logés n'était pas une artère très achalandée par piétons, mais notre bureau était même difficile à voir, étant situé un étage au-dessus d'une quincaillerie! Ce nouveau site de notre Bureau-comptoir de service, ayant pignon sur rue devrait pouvoir fournir à tous les usagers de Sherbrooke et des environs des services météorologiques à la pointe du progrès, à partir des prévisions provenant de Montréal et de d'autres données météorologiques de partout ailleurs.

Le Bureau météorologique de Sherbrooke est non seulement un des neuf (9) Bureaux de présentation et de consultation du genre dans la Région du Québec, mais il est unique au Québec et aussi au Canada dans le sens que nous tentons ici une expérience-pilote de prévisions à très courte échéance (quelques heures, contrairement aux prévisions préparées par un Bureau de prévisions comme celui du Québec, à Montréal).

Monsieur Réal Franc fut le premier Chef de service du Bureau météorologique de Sherbrooke alors que celui-ci était situé sur la rue Belvedère. Monsieur Franc était non seulement le Chef du Bureau, mais il était aussi le seul employé du Bureau. Depuis, monsieur Franc fut promu au Bureau régional et il était remplacé à Sherbrooke par monsieur Gérard Desjardins. Afin de mener à bien l'expérience-pilote de prévisions à très courte échéance, mentionnée ci-dessus, nous fournissons à monsieur Desjardins une aide considérable de trois techniciens météorologiques subalternes. Nous avons aussi augmenté les données de base à partir désquelles sont préparées toutes prévisions (à courte, moyenne ou longue échéance), en se servant, là ou c'est profitable de le faire, de données de certaines stations climatologiques du Service météorologique de la Province de Québec. Nous avons aussi organisé un autre réseau officieux pouvant nous fournir des observations météorologiques très rudimentaires mais quand même utiles, (cultivateurs, poste de police, poste de l'autoroute, postes d'essence, autres particuliers).

Le Bureau de Sherbrooke aura aussi accès à certaines informations provenant des radars météorologiques du Montréal (McGill), Québec et même celui de la USAF à Plattsburg.

En retour, pour ce projet-pilote le Bureau météorologique de Sherbrooke fera un effort particulier pour satisfaire certains usagers avec besoins météorologiques spécialisés (1 Ferme expérimentale, l'Hydro de Sherbrooke, 1 manufacturier, 1 entrepreneur dans la construction, 1 entrepreneur dans l'entretien des routes provinciales, et finalement, le Comité de loisirs de Sherbrooke (activités en plein air).

Et voilà donc pourquoi cet événement aujourd'hui est particulièrement important pour nous de la Météorologie et pour vous aussi, je l'espère. Je suis certain que le Bureau météorologique de Sherbrooke saura satisfaire toutes vos demandes sur des sujets météorologiques ou même sur des sujets de l'environnement. Ce que le personnel du Bureau ne peut pas vous fournir directement, il sait quand même comment et où l'obtenir pour vous.

Je désire donc remercier tous ceux qui ont été impliqués dans l'organisation et l'aménagement de ce Bureau (le propriétaire, le ministère des Travaux Publics, messieurs Réal Franc, G. Desjardins, André Lépine, Laurent Primeau, Bernard Marois, tous du Service de l'environnement atmosphérique, Région du Québec, et d'autres aussi sans doute).

Et je termine en souhaitant Bonne Chance à Gérard Desjardins et à son équipe.

Renseignements à propos de l'organisation du Service de l'environnement atmosphérique, pertinents au Bureau météorologique de Sherbrooke.

Le Service de l'environnement atmosphérique est une agence féderale dont les buts principaux sont de fournir des renseignements météorologiques à tous les usagers et de promouvoir les sciences de l'atmosphère.

Le Bureau-chef est à Toronto et le responsable du Service est monsieur J.R.H. Noble, Sous-Ministre adjoint.

Afin de servir la population du Canada, le Service est régionalisé. Six (6) Régions se partagent le pays. La Région du Québec comprend la Province de Québec et la Terre de Baffin.

La Région du Québec est sous la direction de monsieur R.J. Fichaud, Directeur régional et comprend quatre (4) composantes principales:–

Le Bureau de prévisions du Québec.
les stations d'acquisition des données de base,
les Services Scientifiques,
les Services météorologiques généraux aux usagers.

Cette dernière composante, la Division des Services météorologiques généraux est organisée en bureaux de service de présentation et de consultation météorologiques. Un de ces bureaux est celui de Sherbrooke, dont le Chef est monsieur Gérard Desjardins.

VOLUNTEER WEATHER OBSERVERS IN ONTARIO AWARDED HONOUR FOR SERVICE TO CLIMATOLOGY

Volunteer weather observers at five Ontario locations were cited for their valuable services and contributions to climatology in Canada. The announcement, by R.G. Graham, Regional Director of the Atmospheric Environment Service expressed appreciation to the award winning observers together with nearly 400 other volunteers in Ontario who, in the pursuit of a hobby or as part of their work devote time everyday to observing the weather.

Suitably inscribed decorative weather instruments will be given to the following:

Staff	–	Filtration Plant, Lindsay
D. Biluk	–	Wawa
M. Curtis	–	Midland
Staff – C. Clarke	–	Water Pollution Control Plant, Orangeville
J.A. Elstone	–	West Guilford

For more than a quarter of a century, 27 years to be exact, **Mr. Curtis** has been taking his twice-daily measurements of rain and snowfall for the AES. These readings have been most useful to the Town of Midland and the Midland Free Press who has published his readings twice weekly. Snowfalls of more than one inch are telephoned daily to alert the Weather Office at Toronto International Airport.

Climat Award Winner M. Curtis – Midland, Ontario and Al Mowat Supervisor Station Operations, Ontario Region.

Mr. Clarke and his staff at the Ontario Ministry of the Environment, Water Pollution Control Plant in Orangeville have a long record of service in measuring and recording the changes in weather. These reports have always been of excellent calibre and most helpful to interested parties.

C. Clarke Climat Award Winner of Orangeville Water Pollution Control Plant, and Dave Murdoch Climatological Quality Control, Ontario Region.

BEAUFORT SEA HISTORICAL DATA ACCESS SYSTEM

The Beaufort Sea Historical Data Access System, a unique system containing hourly analyses and observations, has been created to serve two continuing purposes. First, it is being used to develop regression equations and forecast relationship for terminal forecasting at selected stations near the Beaufort Sea, Second, it will provide a 'rerun' capability to test, compare and develop on the CYBER 76 computer the systems and modules aspects of the Computerized Prediction Support System. This system is being developed as part of an AES Project E-1, which is to design a real-time prediction system for ice-motion, wind-waves, water levels and weather to support off-shore oil-drilling from 1976 onward, and to minimize risks to the environment from the drilling. The Design Project is in turn part of a major Departmental environment-impact-study.

At the present time, work has been completed on a date-base for every hour of the months of July to September, 1976. Examples of the types of data which comprise this data base are:

1. Selected CMC analysis fields at 12-hourly intervals.
2. Terrain heights.
3. Drag coefficients.
4. Hourly objective analysis of msl pressure, surface temperature and surface dew-points.
5. u and v components of msl, 1000 mb and 500 mb geostrophic wind.
6. Boundary-layer and mid-tropospheric vertical velocity.
7. msl geostrophic vorticity and deformation.
8. Advection of temperature and dew-point at the surface.
9. Saturation deficit.
10. Vertical wind shear between 1000-500 mb.

These fields are on disk and are defined on grid-points 127 km apart for a large working area including Alaska, the Beaufort Sea and N.W. Territories.

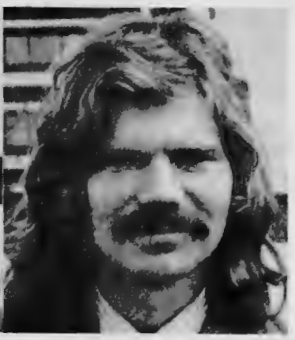
An unusual feature of the analyses is that they represent assimilation of observations both before, at the time of and after the reference time of the analysis. This contrasts with analysis files preserved from operational runs, since the latter only take into account information at and prior to the analysis time. In this way, there is partial compensation for the sparseness of observations in the area.

Work is now proceeding to extend the Historical Data Access System to include the data for the same 3 months of 1975.

G. Roussel

M. Loiselle

A. Caillet



R. Moffet

J-P. Blanchet

LES GRADUÉS DU COURS UQAM NO 3

Le troisième groupe de météorologistes formés à l'Université du Québec à Montréal (UQAM) a complété l'Unité III du cours de formation au quartier général du SEA. Ce groupe a assisté à ce qui devait être une série de premières:

– tout d'abord, M. R. Gagnon a pris la relève de J.H. McBride en temps que directeur du cours;

– deux nouveaux professeurs, H. Allard et le Dr. S. Woronko ont partagé la responsabilité des cours avec J-G. Cantin et G. Fenech qui avaient participé aux cours UQAM précédants;

– l'utilisation de l'ordinateur pour pointer les téphigrammes, analyser le diagramme Hovmoller sur une base hémisphérique et, avec moins de succés, pointer une carte de surface;

– enfin, pour la première fois, un groupe de l'UQAM allait passer la phase d'introduction à la vie militaire à la B.F.C. de Winnipeg.

Le 12 juin 1975, les septs météorologues ont reçus leurs diplômes des mains de M. L.T. Campbell, Directeur Général des Services Centraux, en la présence de plusieurs personnalités. Nous tenons à souhaiter à chacun des gradués une carrière heureuse et pleine de succés, en commençant par leur affectation présente qui les envoie de Vancouver à Shearwater.

L. Garand

M. Boulerice

Les professeurs du cours. . .
J-G. Cantin, G. Fenech, R. Gagnon (Directeur), Dr. S. Woronko.

A NEW PERSPECTIVE

by A.H. Campbell

By any measure the Atmospheric Environment Service has become a large organization. This year the staff is about 2,700 employees and the budget is approximately 83 million dollars. In fact, it has become so large that I suspect most staff members are not very aware of AES programs and people outside of their own area of interest and I certainly include myself in this category. Considerable time and effort must be expended by those who wish to keep current. At that, their knowledge of each program would have to be general rather than specific.

Recently, I was assigned to a management development position in the Program Development and Evaluation Branch in AES Headquarters. Through the activities of this Branch my perspective of AES activities has expanded considerably. I am impressed with the many diverse programs that occupy Canada's weather service and the different job opportunities these provide.

For the past 15 years I have worked in various weather offices as a meteorologist in the forecast production system. Like many employees my contacts with other segments of the national system were rather limited. Mostly, they concerned problems relating to my pay, my career progression, my transfers, my travel advances, my training courses and the light reading in some of the circulars.

Now, my new assignment is providing me with a much broader view of AES. It never occurred to me that so much work was involved in planning and budgeting for AES activities as well as the day-to-day running of the system. I am beginning to appreciate the increasing scope and numbers of AES programs and projects in areas other than the traditional ones of weather observing, forecasting, climatology and research. These are published in several official documents but reading about them doesn't have the impact of learning about the activities from the people involved. That is why I am not going to list them here, of course.

As a recent arrival from a weather office I am quite conscious of the group rivalry that exists between headquarters and the field. I find that I am sensitive to criticisms by Headquarters staff of such things as the current weather forecast. Some of it is justified and some is not. In turn, it is not difficult for field people to nourish some derogatory generalizations about the rest of the organization. The result, of course, is to set field and headquarters in separate competing camps in the minds of many people instead of on the same team. I hope increased awareness of this problem will at least diminish it in the future.

The transfer from the field to headquarters has demanded adjustments from me and a return to a learning environment. I thoroughly enjoyed my assignments in the field but I have found my new position interesting and challenging and have no regrets that I made the move.

ATMOSPHERIC ENVIRONMENT SERVICE ANNOUNCES AWARD WINNERS FOR VOLUNTARY MARINE WEATHER OBSERVING

J.R.H. Noble, Assistant Deputy Minister of Environment Canada's Atmospheric Environment Service, has announced the names of the ships and ships' officers who will receive the Service's 27th annual award for excellence in weather observing at sea during 1974.

In announcing these awards, Mr. Noble commended the voluntary efforts put forth by ships' officers in observing, recording and transmitting weather data such as wind, pressure, temperature, visibility, clouds, waves, etc., which provide valuable input to weather offices throughout the world for issuing weather bulletins and forecasts for the mariners themselves, shipping interests, and the general public.

Canada's voluntary weather observing fleet of 212 ships is an important part of the World Meteorological Organization's international Marine Weather Observing Program in which about 7,000 ships belonging to over 40 different nations participate. In 1974 Canadian reporting ships produced nearly 80,000 weather observations from almost all parts of the world, including Canadian coastal waters and the Great Lakes.

LE SERVICE DE L'ENVIRONNEMENT ATMOSPHÉRIQUE PUBLIE LA LISTE DES LAURÉATS DU PROGRAMME D'OBSERVATIONS MÉTÉOROLOGIQUES MARITIMES BÉNÉVOLES

M. J.R.H. Noble, sous-ministre adjoint du Service de l'Environnement atmosphérique d'Environnement Canada annoncé le nom des navires et des officiers de navires lauréats du 27e prix annuel décerné par le SEA en reconnaissance de l'excellence des observations météorologiques maritimes effectuées bénévolement au cours de l'année 1974.

Lors de la lecture du palmarès, M. Noble a fait l'éloge des efforts bénévoles déployés par les officiers des navires pour observer, enregistrer et transmettre les données météorologiques sur le vent, la pression, la température, la visibilité, la nébulosité, les vagues, etc. qui fournissent aux bureaux météorologiques du monde entier des renseignements précieux pour la publication de prévisions et de bulletins météorologiques destinés aux usagers de la mer, aux compagnies de navigation et au grand public.

Les 212 navires d'observation météorologique bénévole du Canada occupent une place importante dans le programme international d'observations météorologiques ~~mené~~ par l'Organisation météorologique mondiale, auquel participent environ 7000 navires en provenance de plus de 40 pays différents. En 1974, les navires canadiens d'observation ont fourni près de 80,000 observations météorologiques en provenance de presque toutes les parties du monde, y compris des eaux côtières canadiennes et des Grand lacs.

PEN PALS?

Marken.
28-6-1975.

Dear Sirs:

Do you know an address of a weather-amateur in your country (espicially someone on the Prairies or in the Yukon, or the New-Foundland area) who would like to correspond with someone in Holland.

If you know someone, will you please tell me, I'll be you very greatful.

• Much Thanks from:

Jan Visser
Buurt 4 nr. 12.
Marken. (N.H.).
Holland.

(P.S: It doesn't matter if it's a professional it's oké too).

(will you send the answer as quickly as possible
I'm looking out for it).

J. Visser

"When we are right no one remembers – when we are wrong no one forgets! !

This comes as a pleasant change! !

National Research Council
Canada
Space Research Facilities
Branch
Ottawa, Canada
K1A 046

10 July 1975 7611-4

Mr. J.J. Labelle
Regional Director
Atmospheric Environment Service
185 Carlton St.
Winnipeg, Manitoba
R3C 3V1

Dear Mr. Labelle:

The Superintendent of the Churchill Research Range, and his staff, have requested that I convey our sincere appreciation to the Atmospheric Environment Service for the outstanding performance of your staff in Fort Churchill during the 1974/75 rocket season.

The high standard of professional excellence displayed by the forecasters and briefers at the Churchill Office was particularly evident during the launch of a series of 9 Paiute Tomahawk rockets. Since some of these rounds involved chemical releases and photographic observation from a number of ground locations, accurate information was required on the conditions of visibility from all of the observation points as well as accurate data on the upper winds for trajectory calculations.

The Project Scientist (Dr. M. McLeod) and several members of his team commented on the clear and accurate weather briefings that were provided day after day during the entire series. The matter was mentioned during the Post Flight meeting and was mentioned again by Air Force Cambridge Research Laboratory representatives at the NRC/ NASA Meeting in Washington.

Our Range Staff at the Churchill Research Range have informed me that our success the past season is in part due to the excellent support we have received from the local weather office. Please extend our sincere thanks to all the forecasters and briefers who manned the Fort Churchill Weather Office during the winter of 1974/75.

Yours sincerely,

(Signed by Z.R. Charko)

Z.R. Charko, Head
Range Section

PERSONNEL

The following have accepted positions as a result of competitions:

Notification and Data Stream	Western Region Senior Inspector EG-ESS 8 T.A. Donnelly
74-DOE-WPNA-CC-199	Western Region Arctic Weather Central Supervising Meteorologist MT 7 G. Wells
74-DOE-WPNA-CC-188	Western Region Edmonton Weather Office Supervising Meteorologist MT 5 K.W. Daly
75-DOE-TOR-CC-19	Toronto Weather Office Senior Meteorologist MT 5 Mr. M.J. Leduc
74-MDE-Q-CC-94	CMC Montreal Met. Prog. Analyst MT 6 Mr. A.O. Mycyk
74-DOE-TOR-CC-274	Climatological Applications & Consultations Division, Industry (ACCI) Industrial Meteorologist MT 7 T.K. Won
74-DOE-TOR-CC-275	METOC Centre Halifax Duty Forecaster MT 4 Miss M.P.C. Regan

The following transfers took place:

R.I. Black	From: Pacific Weather Central To: Maritime Command Headquarters, Esquimalt
E.R. Kulbaski	From: Central Region, Winnipeg To: Toronto, AES HQ ACIR

Postings – Basic Met. Course 75-3

NAME	TO	REPORTING DATE
C. Weber	Stolport	July 9, 1975
R. DeLyser	Goderich W.S.	July 14, 1975
W. Rutledge	Toronto II (Pickering)	July 14, 1975
R.J. Miller	Hamilton Weather Office	July 14, 1975

Temporary Duty:

W.B. Watson	From: CFB Ottawa To: Ice Central – Ottawa
P.S. King	From: Instruments Branch To: ARPD
Dr. Ian D. Rutherford	From: DPR Montreal (CMC) To: AES Computer/ Communications Study
J.G. Babineau	From: Maritimes Weather Office To: Montreal Weather Office
Ms. R. Wall	From: Maritimes Weather Office To: CFB Greenwood

Separations:

Miss L.C. Chow	METOC Centre, Esquimalt Resigned June 30, 1975
Mr. J.F.L. Knight	CFB Trenton Resigned June 15, 1975

Deceased:

W.R. "Reg" Hamilton	Vancouver, B.C. June 30, 1975
Charlie Hunt	Victoria, B.C. July 1, 1975

TRIVIA

Dictons météorologiques

Ciel très étoilé n'est pas de longue durée

Tout ce que l'Eternel veut, il le fait,
Dans les cieux et sur la Terre,
Dans les mers et dans les abîmes.
Il fait monter les nuages des extrémités de la Terre,
Il produit les éclairs et la pluie,
Il tire le vent de ses trésors.

(Psaume 134, 6 et 7)

Arc-en-ciel au vent, mauvais temps;
Arc-en-ciel sous le vent, beau temps.

. . . . . .

Meteorological Sayings

It's sure to be a dry moon if it lies on its back, so that you can hang your hat on its horns.

. . . . . .

Rainbow to windward foul falls the days
Rainbow to leeward, damp runs away.

. . . . . .

I have a keen, uncanny knack of knowing how to answer back; the trouble is,
I must admit, its midnight when I think of it.

. . . . . .

A man can fool all women some of the time, and some of the women all of the time, but what bothers a man is why he can't fool the same woman the same way all of the time.

. . . . . .

My job, alas, does not provide effective price rise hedges.
Fringe benefits I thought I spied turned out to be frayed edges.

Diverses expressions

Expression	Signification ou équivalent
Sentir la morue	Dégager une mauvaise odeur
La lendemain de la veille	Le lendemain d'une soirée fatigante
Il est bouché par les deux bouts	Il est stupide
Un oeil au beurre noir	Un oeil poché
Ca n'a pas d'allure!	C'est ridicule!
Il tombe à pic	Il arrive au moment crucial
Ferme ta trappe	Ne dis plus un mot
Avec des gants blancs	Avec diplomatie
Tu es dans les patates	Tu te trompes complètement
Prends ton temps	Ne te dépêche pas.