

Eastern
Snow
Conference

Proceedings of the

1987

Annual Meeting



PROCEEDINGS OF THE
FORTY-FOURTH ANNUAL
EASTERN SNOW CONFERENCE
JUNE 3RD AND 4TH, 1987
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FOREWARD

The 44th annual Eastern Snow Conference (ESC) was held in Fredericton, New Brunswick at the Fredericton Motor Inn on June 3rd and 4th, 1987. Sixty-five delegates registered for the Conference. The delegates listened to seventeen scientific papers and discussed four poster presentations with their respective authors. Included in the meeting were five displays on scientific equipment. All of the papers and poster presentations along with a one page advertisement from the equipment companies are published in this year's proceedings. I was unable to attend this year's meeting but I was told there was lively discussion and a good time was had by all the delegates.

A new feature has been added this year entitled 'The President's Page'. This is a one page summary of pertinent information about the various work of ESC committees and the general feeling the President has had about his one year in office.

Membership in the ESC is open to all interested individuals. Annual dues are only fifteen dollars (U.S.) - twenty dollars (CDN) which includes one copy of the Proceedings, plus any other data distributed by the ESC. Interested individuals are asked to contact the Secretary - Don Dunlap. Additional copies of the current Proceedings and all back issues can be obtained from the Secretary.

Publication of these Proceedings was made possible in part by Corporate Memberships in the Conference held by the following:

¹ Hydro Québec, Place Dupuis, 855 est, rue St. Catherine, Montréal, Québec, CANADA H2L 4M4	² Province of New Brunswick, Department of the Environment - Water Resources, P.O. Box 6000, Fredericton, New Brunswick CANADA E3B 5H1	³ Ontario Hydro, 700 University Ave., Toronto, Ontario, CANADA M5G 1X6
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I would like to extend my appreciation to all the authors this year for their timeliness in submission of their paper.

I look forward to seeing everyone in Lake Placid - June, 1988.

John Lewis
Editor - 1987

The Eastern Snow Conference Meeting is co-sponsored by the American Geophysical Union and the American Water Resources Association.

PROCEEDINGS OF THE EASTERN SNOW CONFERENCE
 FORTY-FOURTH ANNUAL MEETING, JUNE 3rd and 4th, 1987

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THE EASTERN SNOW CONFERENCE

The Eastern Snow Conference (ESC) is a joint US/Canadian organization which was founded in the 1940's. It is an association of people interested in research and applied aspects of the study of ice in all its forms, especially snow. The principal activities of the ESC are the organization of an annual meeting, in the US or Canada in alternate years, and the production of the annual Proceedings of the Eastern Snow Conference, which now form more than forty volumes deposited in libraries throughout North America and Europe. The annual meetings are sometimes held in major cities such as Washington, Montreal, Toronto or Boston and sometimes in smaller cities such as Peterborough, Oswego, Portland or Fredericton.

The members of the ESC are a very diverse and, over the years, fluctuating, group. They include professional snow surveyors, engineers and technologists (of various stripes), professors and students, hydrologists and biologists, people responsible for keeping roads clear of snow and rivers free of ice, and others interested in snow and agriculture. The members are drawn from all parts of eastern North America, they live and work in places which extend from Maryland to the high Arctic. The line between the territory of the ESC and its counterpart in the other half of the continent, the equally venerable Western Snow Conference, is not a precise one. Residents of the Mid-West and of the Prairie provinces seem to join one or the other organization on the basis of personal whim such as a preference for Reno, Nevada over Bangor, Maine as a desirable meeting place...

In recent years, the annual ESC meetings have included sessions on snow and small mammals, snow and buildings, river ice, permafrost, remote sensing of snow and ice, biology of sea ice, snow and ice on lakes, measuring snow and ice, hydroelectricity and snow and ice, glaciers, icebergs, snow and farming etc. etc.

Eastern Snow Conference est une organisation internationale canado-américaine fondée dans les années '40. Elle regroupe des gens qui ont des intérêts communs dans l'étude théorique et pratique de la glace sous toutes ses formes, en particulier sous la forme de neige. Eastern Snow Conference a comme activités principales d'organiser sa réunion annuelle en alternant le site du Canada aux Etats-Unis, d'en produire les comptes-rendus qui se montent maintenant à plus de quarante volumes que l'on peut trouver dans les librairies de l'Amérique du Nord et d'Europe. La réunion annuelle peut se tenir tout aussi bien dans des villes importantes comme Washington, Montréal, Toronto ou Boston comme dans des plus petites comme Peterborough, Oswego, Portland ou Frédéricion.

Les membres de Eastern Snow Conférence représentent un grand nombre de domaines reliés à la neige et la glace. On y retrouve des spécialistes des relevés de neige, des ingénieurs et des techniciens, des professeurs et des étudiants, des hydrologues et des biologistes. des gens ayant la responsabilité d'entretener les chemins en hiver ou de contrôler la glace en rivière, d'autres ayant quelque intérêt dans la neige et l'agriculture. Tous ces membres viennent de l'est de l'Amérique du Nord et peuvent y habiter du Maryland, U.S.A., à l'Arctique. D'ailleurs la ligne qui sépare le territoire de Eastern Snow Conference à son pendant de l'ouest la vénérable Western Snow Conference est assez diffuse. Les habitants du centre-ouest américain ou des Prairies peuvent choisir de rallier une ou l'autre organisation sur une base très personnelle comme de préférer d'aller à Reno, Nevada plutôt que Bangor, Maine pour leur colloque annuel.

Dans les dernières années, aux réunions annuelles de Eastern Snow Conference on a tenu des sessions sur la neige et les petits mammifères, la neige et le bâtiment, la glace de rivière, le pergélisol, la télédétection de la neige et de la glace, la biologie de la glace marine, la neige et la glace lacustres, la mesure de la glace et de la neige, l'hydroélectricité et la glace et la neige, les glaciers, les icebergs, la neige et l'agriculture, etc...

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1986-87

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PRESIDENT'S PAGE

The June 1987 Meeting which was held at the Fredericton Motor Inn, Fredericton, New-Brunswick, was again a great success. The papers which were presented at the technical sessions, either orally or on posters, were of high calibre and their authors have to be thanked for their efforts in preparing them.

The Secretary-Treasurer's report showed us that Eastern Snow Conference is always in good financial state.

Beginning with this year, membership cards were distributed to ESC Members. It is hoped that cards will help maintain confidence and pride in our Organization.

Unfortunately, for reasons out of our control, the 1986 proceedings were not ready to be distributed for the 1987 meeting. However, they now have been sent to members. The 1987 edition is planned to be ready sometime in late 1987, well before the next ESC meeting.

The 1987 Student Paper Competition had an appeal to seven qualifying students. Special thanks to Mr. Cameron Wake, the winner from the Wilfrid Laurier University, who presented a very good quality paper. I also extend my thanks to the other six participants who made a good effort towards this competition.

At the meeting, we were happy to have displays of scientific equipment from the following five companies: Bendix Avelex Inc., Campbell Scientific Canada Corp., Seimac Ltd, Hollis International and Environmental Instruments Inc. In addition to the Manufacturers displays, the Soil Conservation Service, USA, through Bill Fecke, had an information display on their Meteor Communications System.

I express my thanks to all the ESC officers who, with enthusiasm, made all the chores necessary to maintain a well alive society and to achieve a very good annual meeting. They made my presidential tenure a very easy and gratifying one.

JEAN-LOUIS BISSON