

Eastern
Snow
Conference

Proceedings of the

1989

Annual Meeting



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Eastern Snow Conference**

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FOREWORD

The 46th annual Eastern Snow Conference (ESC) was held in Quebec City at the Chateau Frontenac on June 8th and 9th, 1989. There were 103 participants at the Conference; 18 of these were students and 3 corporate members had representatives present. A very full Speaker's Session with 23 papers was held and a record number of 21 poster papers was presented. A special session was presented reviewing snow research conducted in various geographical regions of the world.

The quality of the papers given and the 'joie de vivre' of Quebec City made for a most memorable meeting. Much thanks must go to Gerry Jones and his Local Arrangements Committee for their hard work and careful planning. My impression was that the delegates had both a intelligently stimulating and socially enjoyable time.

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 ESC. Interested individuals are asked to contact the Secretary - John Metcalfe. Additional copies of the current Proceedings and all back issues can be obtained from the Secretary.

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

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After five years, this will be the last 'Proceedings' for which I shall serve as editor. I shall turn over the reins to the very capable hands of Tim Pangburn and Mike Ferrick. They will serve as editors for the 1990 edition and for the next few years. (If we are nice to them maybe longer). I wish them well and I hope they get the same satisfaction (albeit sometimes frustrating) from their tenure as editors of the 'Proceedings of the ESC'. I know the authors will show the same cooperation to them as they have done with me. I want to express my thanks to the officers and members of the ESC and to the authors who contributed to this publication during the last five years. It has been fun.

John E. Lewis
Editor - 1989

PROCEEDINGS OF THE EASTERN SNOW CONFERENCE
 FORTY-SIXTH ANNUAL MEETING, JUNE 8th and 9th, 1989

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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 bibliothèques 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 Frédéricton.

Les membres de Eastern Snow Conference 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'entretenir 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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1988-89

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President's Page

The healthy growth of the Eastern Snow Conference (ESC) requires a blend of old and new members as well as sound management. If you are interested in becoming more involved in the Eastern Snow Conference, please contact one of the officers listed on the preceding page. The brief report below gives a thumbnail sketch of the type of work our committees do and the business discussed at our meetings.

Committees

1. Research Committee

It has been decided to remove the age requirement for the student paper competition. Previously, student authors had to be under 30 years old to submit a paper for consideration. Now, as long as a student is working towards a degree and is sponsored by a college advisor, he or she is eligible to win the student paper award. This year the Research Committee judged that the winner was Andre Giguere of the Physics Department at McGill University for his paper entitled "Comparison of Measurement of Snowfall by Radar Using S-Band (10 cm) and a X-Band (3 cm) Transmitter." In addition to a cash prize and expenses to the meeting, Andre was awarded the fourth Wiesnet Medal.

2. Snow Survey Committee

The snow survey schedule was distributed to members of the ESC and to agencies collecting snow data. Survey dates, Landsat overpass dates and addresses of regional reporting centers have been published by the ESC for about a decade.

The Snow Survey Committee is interested in comments concerning results of last year's snow survey questionnaire on the snow survey network in eastern Canada and the U.S.

3. Equipment Committee

The Equipment Committee has begun work on putting together a snow equipment reference manual. This manual will contain information necessary to researchers regarding, what equipment exists for doing the job, what does it do, how is it used and where is it manufactured.

Next year the 47th annual Eastern Snow Conference will be held at Orono, Maine. Orono, near Bangor, is the home of the University of Maine. The ESC last met in Maine in 1969, but this will be our first meeting at Orono. I hope as many of you can attend as possible.

James Jetter