

EASTERN SNOW CONFERENCE

Report of the

COMMITTEE ON RESEARCH

February 1965

This is a report on research projects relating to snow and ice as revealed by a poll of current members of the Eastern Snow Conference. Where possible, data on reports and publications are included when they are outside the Conference. The outline of this report is as follows:

SECTION I - SUMMARY OF CURRENT SNOW RESEARCH PROJECTS

- A - Projects Not Reported in 1964
- B - Projects Reported in 1964 - Additional Information
- C - Projects Reported in 1964 - No Change

Projects are listed in the following subject order:

- Forecasting
- Snow Surveys & Measurements
- Snow Climatology
- Physics
- Ice
- Engineering Problems

SECTION II - SUPPLEMENTAL INFORMATION

- A - Publications Not Previously Reported.
- B - Other Data Sources - No Publications Available.

Respectfully submitted,
Committee on Research, ESC

C. D. Hopkins, Jr., Chairman
D. R. Campbell
B. A. Power

SECTION I - CURRENT SNOW RESEARCH

GROUP A - NEW PROJECTS

- 65A1 STREAMFLOW FORECASTING PROCEDURES
Director, Office of Hydrology, U.S. Weather Bureau, Washington, D.C.

At each of the river forecast centers improvements are made in day-to-day forecasting of streamflow. The approach lies in applying more sophisticated methods to operational situations. Current investigations include effects of snow and ice on runoff and on river stages.

- 65A2 WEATHER FORECASTING TECHNIQUES
Director, Office of Meteorological Research, U.S. Weather Bureau, Washington, D.C.

At Weather Bureau field stations, weather forecasting problems are being studied and techniques are being developed for increasing the utility and accuracy of forecasts. Heavy snow forecasts are included.

- 65A3 FLOOD RUNOFF REDUCTION AND WATER YIELD IMPROVEMENT FROM THE GLACIATED MOUNTAIN AREAS OF NEW ENGLAND
Northeastern Forest Experiment Station, U.S. Forest Service, Laconia, N.H.

The quantitative influence of forest environment and associated climatic features on streamflow are being investigated. The alleviation of streamflow extremes by biological manipulation is being investigated in the glaciated mountain areas of New England.

Several published papers are available from: Director, Northeastern Forest Experiment Station, 102 Motors Avenue, Upper Darby, Pa.

- 65A4 AN AUTOMATIC SNOW SENSOR
Soil Conservation Service, 701 N.W. Glisan St., Room 507, Portland, Oregon.

Development of automatic snow sensor that can measure and transmit the equivalent water content of snow from a remote location.

Papers have been given at Western National AGU Meeting, Seattle, December 1964, and will be given at the Western Snow Conference, Colorado Springs, April 1965.

- 65A5 LAKE EFFECT STORMS IN NEW YORK STATE
Atmospheric Sciences Research Center, State University of New York,
411 State St., Albany, New York.

Causes, distribution and economic effects of these storms are being studied.

Several reports are available from the above address.

- 65A6 INTERCEPTION OF SNOWFALL BY FOREST
David Miller, University of Wisconsin, Milwaukee, Wisconsin.

A review is being made of the transmission of snowfall through forest canopies in terms of geophysical processes in comparison with transmission of short-wave and long-wave radiation fluxes.

"Interception Processes During Snowstorms" is available from the above.

- 65A7 SNOW INTERCEPTIONS BY CONIFEROUS TREE CROWNS
Arthur R. Eschner, S.U.N.Y. College of Forestry, Syracuse, N.Y.

This is a determination of the amount of snow intercepted by individual crowns of a coniferous species and the disposition of the intercepted snow under various climatic conditions in Central New York. This will provide data for a rational approach to the role of snow in winter moisture and energy balances in forests.

- 65A8 REMOVAL OF AIR POLLUTION BY SNOWFALL
Vincent J. Schaefer, Home Laboratory, RD 3, Box 36, Schenectady, New York.

A simple optical method is being sought to monitor scavenging of aerosol particles by snowfall.

- 65A9 DENSITY OF NEWLY FALLEN SNOW
Bernard A. Power, Weather Engineering Corp. of Canada, Inc.,
313 Dorval Avenue, Dorval, P.Q.

The density of newly fallen snow is being correlated with the crystal structures of the snow.

The following report has been published:

"Snow Crystal Forms and Riming Effects as Related to Snowfall Density and General Storm Conditions" by B. A. Power, P. W. Summers and J. D'Avignon. Journal of the Atmospheric Sciences, May 1964.

- 65A10 REPLICATION OF SNOW CRYSTALS
Vincent J. Schaefer, Home Laboratory, RD 3, Box 36, Schenectady, New York.

A report is available entitled:

"Preparation of Permanent Replicas of Snow, Frost and Ice", Weather-wise, December 1964.

- 65A11 SNOW AND ICE CONTROL IN URBAN AREAS
American Public Works Association Research Foundations, 1313 East 60th Street, Chicago, Illinois.

This is an investigation of the losses due to snow and ice and the benefits to be gained from a control program. New techniques are being studied for breaking the bond between pavement and/or preventing its formation.

GROUP B - PROJECTS LISTED PREVIOUSLY

- 65B1 STREAMFLOW FROM SNOWMELT IN THE TOBIQUE RIVER BASIN, NEW BRUNSWICK.
Dr. K. S. Davar, Dept. of Civil Engineering, University of New Brunswick, Fredericton, N.B.

Several different semi-empirical techniques have been developed in this study. These are temperature index methods, extension of antecedent degree day and streamflow techniques using contemporary data, and the rational snow-melt equations of the U.S. Corps of Engineers, using distribution graphs.

- 65B2 SNOWFALL FREQUENCIES AND SNOWCOVER DATA
Robert E. Lautzenheiser, USDC, Weather Bureau State Climatologist, 1000 Customs House, Boston, Mass.

Additional stations now available are: Hyannis, Provincetown, Sandwich, Mass., and Montpelier, Vt.

GROUP C - PROJECTS STILL ACTIVE BUT UNCHANGED

- 65C1 WATER SUPPLY FORECASTING PROCEDURES
Director, Office of Hydrology, U.S. Weather Bureau, Washington, D. C.
- 65C2 SNOW ACCUMULATION AND MELTING
Director, Office of Hydrology, U.S. Weather Bureau, Washington, D. C.
- 65C3 GAGE AND NETWORK PERFORMANCE
Director, Office of Hydrology, U.S. Weather Bureau, Washington, D. C.

- 65C4 PRECIPITATION CHARACTERISTICS
Edwin T. Engman, Agric. Research Serv., Sleepers River Research Water-
shed, Danville, Vt.
- 65C5 RADAR DETECTION OF SNOW ..
B. L. Wiggin, U.S. Weather Bureau, Buffalo, New York.
- 65C6 STORM CHARACTERISTICS
Director, Office of Hydrology, U.S. Weather Bureau, Washington, D. C.
- 65C7 PROBABLE MAXIMUM PRECIPITATION
Director, Office of Hydrology, U.S. Weather Bureau, Washington, D. C.
- 65C8 TOPOGRAPHIC INFLUENCES ON PRECIPITATION
Director, Office of Hydrology, U.S. Weather Bureau, Washington, D. C.
- 65C9 INFLUENCE OF SOIL AND LAND USE ON RUNOFF
George Comer, Agric. Research Serv., Sleepers River Research Water-
shed, Danville, Vt.
- 65C10 WATER RESOURCES IN NEW ENGLAND
G. T. Bulgarelli, 23 Howe Road, Pittsfield, Massachusetts.

SECTION II - SUPPLEMENTAL INFORMATION

A - PUBLICATIONS NOT PREVIOUSLY REPORTED

1. SNOWFALL IN CANADA
M. K. Thomas, Department of Transport, Meteorological Branch,
Circular 3977, January 1964.
2. A SURVEY OF GREAT LAKES SNOW FALL
Morley K. Thomas, Pub. No. 11, University of Michigan, 1964.

B - OTHER DATA SOURCES - NO PUBLICATIONS AVAILABLE

None.