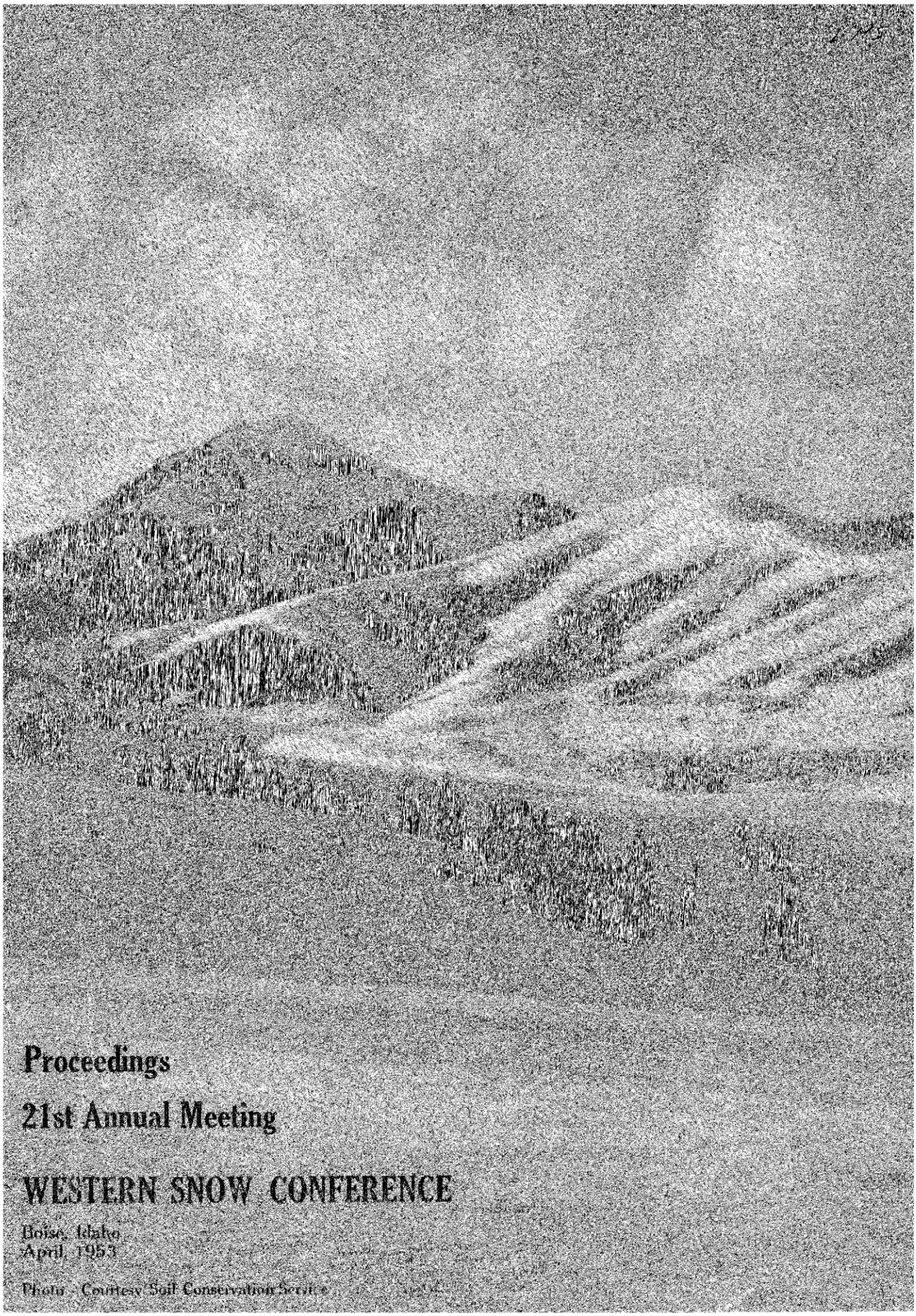

Proceedings

21st Annual Meeting

WESTERN SNOW CONFERENCE

Boise, Idaho
April, 1953

Photo - Courtesy Soil Conservation Service

PROCEEDINGS

of the

WESTERN SNOW CONFERENCE

Boise, Idaho
April 20-22, 1953

TWENTY-FIRST ANNUAL MEETING

William A. Lang, General Chairman
P. O. Box 351
Los Angeles, California

PROGRAM COMMITTEE

David E. Donley
Morlan W. Nelson
Sterling Davis

PUBLICATION COMMITTEE

Austin E. Helmers
David E. Donley
Homer J. Stockwell

Printed by
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Colorado A and M College
Fort Collins, Colorado
September, 1953

Table of Contents
April 20-22, 1953
Boise, Idaho

Page

SNOW SURVEYS IN THE NORTHEAST AND USES OF THE DATA--Arthur W. Harrington 1

A NEW PROGRAM OF CO-ORDINATED FEDERAL-STATE WATER SUPPLY FORECASTS -- R. A. Work and Anthony J. Polos..... 4

U. S. WEATHER BUREAU SNOW COVER OBSERVATION REVIEW--Keith D. Butson 5

SNOW SURVEY DATA IN THE WATER RESOURCES REVIEW--William S. Eisenlohr, Jr..... 7

A HISTORICAL RECORD OF THE USE OF SNOW-COVER FORECASTS IN THE MID-COLUMBIA AREA--Harry A. Kramer 8

EVIDENCE OF MAN-MADE CLIMATIC CHANGE--Irving P. Krick, (Presented by Lewis 0. Grant) 11

DISCUSSION—Milton S. Sachs..... 17

AN APPROACH TO STREAMFLOW FORECASTING--Martin K. Fulcher..... 18

A SYSTEMATIZED REGRESSION FORECASTING METHOD--Manes Barton 24

THE USE OF PRECIPITATION AND SNOW SURVEY DATA IN WATER SUPPLY FORECASTING--Anthony J. Polos..... 30

DISCUSSION--Clarence Pederson 34

REPRODUCTION OF SNOWMELT FLOODS IN THE BOISE RIVER--John Summersett..... 36

THE USE OF AERIAL PHOTOGRAPHS OF SNOW DEPTH MARKERS IN WATER SUPPLY FORECASTING--Thomas J. Henderson. 44

HIGH SIERRA SNOW ABLATION OBSERVATIONS--Oliver Kerhlein, Eugene Serr, *Sr.,* Richard D. Tarble and Walter T. Wilson..... 47

CORRESPONDENCE -- J. E. Church 51

USE OF BASE FLOW IN FORECASTING RUNOFF DURING THE NON-FLOOD SEASON--C. C. McDonald 53

CONCEPT AND CHARACTERISTICS OF BASE FLOW IN THE COLUMBIA RIVER BASIN -- W. D. Simons 57

BASE FLOW AS A PARAMETER IN FORECASTING THE APRIL-JUNE RUNOFF--M. W. Nelson, C. C. McDonald, and M. Barton. 61

DISCUSSION OF BASE FLOW CONCEPTS--Willard W. Dean 67

DISCUSSION OF PAPER "A NEW PROGRAM OFCOORDINATED FEDERAL-STATE WATER SUPPLY FORECASTS"--Fred A. Strauss 69

FOREWORD

This publication includes the available papers and discussions presented at the Twenty-First Annual Meeting of the Western Snow Conference at Boise, Idaho on April 20-23, 1953. Informal discussions presented from the floor are not included in these proceedings.

An attendance list, a financial report by the general chairman, and the proposed "Constitution and By Laws, Western Snow Conference" are in the Appendix to these proceedings.

Correspondence in reference to these proceedings or other Western Snow Conference matters should be addressed to William A. Lang, General Chairman, c/o Southern California Edison Company, P. O. Box 351, Los Angeles, 53, California.

The publication of this report is made possible through dues and registration fees from individual members and the following organizations who hold corporate memberships or have purchased copies of former proceedings.

Los Angeles Flood Control Dist., 751 S. Figueroa, Los Angeles, California
Oregon State College, Corvallis, Oregon
Modesto Irrigation District, Modesto, California
East Bay Municipal Utility District, Oakland, California
U. S. Bureau of Reclamation, Boulder City, Nevada
Upper Colorado River Commission, Grand Junction, Colorado
Colorado Experiment Station, Fort Collins, Colorado
State Engineer of New Mexico, Santa Fe, New Mexico
State Engineer of Wyoming, Cheyenne, Wyoming.
Bonneville Power Administration, P. O. Box 3537, Portland 8, Oregon
Southern California Edison Co., P. O. Box 351, Los Angeles, California
California-Oregon Power Company, Medford, Oregon
Northern Colorado Conservancy District, Greeley, Colorado
Arkansas Valley Ditch Assoc., Thatcher Bldg., Pueblo, Colorado
J. G. Boswell Co., South Spring Street, Los Angeles, California
Colorado Fuel and Iron Corporation, Pueblo, Colorado
Pacific Power and Light Company, Portland, Oregon
City of Seattle, Department of Lighting, Seattle, Washington
General Electric Company, Hanford Works, Hanford, Washington
Salt River Valley Water User's Association, Phoenix, Arizona
Metropolitan Water Dist., 306 W. 3rd St., Los Angeles, California
Public Service Company of New Mexico, Santa Fe, New Mexico
Utah State College, Logan, Utah
Washington Water Power Company, Spokane, Washington
Pacific Gas and Electric Company, 245 Market, San Francisco, Calif.
Dept. of Lands and Forests, Parliament Bldgs., Victoria, B. C., Canada
U. S. Bureau of Reclamation, Salt Lake City, Utah
Division of Water Resources, 401 Public Works Bldg., Sacramento, Calif.
Imperial Irrigation District, El Centro, California
U. S. Bureau of Reclamation, Boise, Idaho
State Engineer of Nevada, Carson City, Nevada
Tucker Sno-Cat Corporation, Medford, Oregon
University of Idaho, Moscow, Idaho
U. S. Geological Survey, Washington, D. C.
Nevada Experiment Station, Reno, Nevada
U. S. Bureau of Reclamation, Region 7, Denver, Colorado
Kern County Land Company, Bakersfield, California.
Turlock Irrigation Company, Turlock, California
Dept. of Water and Power, City of Los Angeles, Los Angeles, California
Merced Irrigation District, Merced, California
North American Weather Consultants, Pasadena, California
City of San Francisco, California
Denver Water Board, City of Denver, Colorado
U. S. Bureau of Reclamation, Sacramento, California
Meteorological Division, Government of Canada, Ottawa, Canada
University of Washington, Seattle, Washington
University of New Mexico, Albuquerque, New Mexico
U. S. Bureau of Reclamation, Hydrology Branch, Denver, Colo.
Miller and Lux, Los Banos, California
Library, U. S. Department of Agriculture, Washington, D. C.

Montana State College, Bozeman, Montana
University of Montana, Missoula, Montana
California Electric Power Co., Bishop, California
Montana Power Company, Butte, Montana.
Water Resources Development Corporation, 460 S. Broadway, Denver, Colorado
Hansen Machine Works, 728 - 12th St., Sacramento, California
Okanagan Irrigation District, Okanagan, Washington
West Kootenay Power and Light Co., Ltd., Trail, British Columbia
East Kootenay Power Co., Fernie, British Columbia
Wood and McClay, Ltd, 68 E. Hastings St., Vancouver, British Columbia
S. M. Simpson, Ltd, 1390 Ellis St., Kelowna, British Columbia
Greater Vancouver Water District, Vancouver, British Columbia
British Columbia Electric Co., Vancouver, British Columbia
Powell River Co., Ltd., Powell River, British Columbia
Boise Board of Control, 214 Broadway, Boise, Idaho
Potlatch Forests Inc., Lewiston, Idaho
Tacoma City Light Dept., Tacoma, Washington
Aluminum Company of Canada, Vancourver, British Columbia
Colorado River Water Conservation District, Grand Junction, Colorado
Trans-Mountain Oil Pipe Line Co., Vancouver, British Columbia

MINUTES OF BUSINESS MEETING
WESTERN SNOW CONFERENCE
BOISE, IDAHO
APRIL 20, 1953

The annual business meeting was called to order by W. A. Lang, General Chairman, Los Angeles, California, acting as presiding officer. Mr. H. J. Stockwell, Fort Collins, Colorado was appointed as secretary for the meeting.

Mr. Lang presented the attached financial statement showing a summary of operation for the past year. The cash balance is now $1224.74 or $64.53 increase over the past year. Mr. Lang stated that billings for individual dues will be mailed soon after his return home which explains the limited income from individual dues.

The subject of "Constitution and By-Laws" was next in order of discussion. The attached proposed "Constitution and By-Laws" which was prepared by members of the executive committee was discussed in detail. Numerous minor changes and corrections were suggested and some were adopted by general consent. A formal motion was made by Mr. F. A. Strauss, Sacramento, California, and seconded by Mr. C. E. Pederson, Portland, Oregon, as follows: "The registration fee for each annual meeting shall be set by the local arrangements committee for said meeting with the approval of the General Chairman". This motion was to add the above to Article V - Meetings of the Constitution and By-Laws. The motion was adopted.

Mr. H. J. Stockwell made a motion that the attached Constitution and By-Laws as amended with such other minor additions and corrections as may be determined by the General Chairman be approved by the Executive Committee and submitted to the membership for adoption as provided in Article XVI. The motion was seconded by Mr. F. A. Strauss. The motion carried.

Some discussion was heard relative to a permanent location for records and reports of the Western Snow Conference and for publications received by the Conference. The University of Nevada Library was suggested but further study of the problem was recommended. A suggestion by Mr. Pederson was favorably considered to list the publications received during the preceding year in the proceedings of the Conference.

On the question of the location of the next annual meeting, Mr. Stockwell read letters from Mr. E. O. Larson, Regional Director, U. S. Bureau of Reclamation, Mr. M. T. Wilson, District Engineer, U. S. Geological Survey and Mr. W. H. Bierbower, Acting Regional Director, U. S. Weather Bureau, all of Salt Lake City, Utah, inviting the Western Snow Conference to hold the 1954 meeting in Salt Lake City and offering their facilities to assist with the details of the program. Mr. Stockwell then made a motion that the 1954 meeting be held in Salt Lake City. The motion was seconded by Mr. G. L. Pearson, Logan, Utah. The motion carried.

Mr. Lang appointed the following committees:

For "El Farsante" Award
Fred A. Strauss
George A. Lewis
Homer J. Stockwell

For Publication of 1953 Proceedings
David E. Donley
Austin E. Helmers
Homer J. Stockwell

For Resolutions
W. T. Frost
W. E. Johnson
C. E. Pederson

The appointment of the program committee for next year was deferred for further study.

There being no further business, the meeting was adjourned.

At the final session of the Western Snow Conference two resolutions were presented by W. T. Frost, Chairman, Committee on Resolutions. The first resolution expressed the appreciation of the members of the Conference to the officials of the State of Idaho and the City of Boise for their hospitality and assistance with the meeting and to David E. Donley and Morlan Nelson of the program and local arrangements committee for the excellent program and facilities for the meeting. The second resolution expressed the appreciation of the members of the Conference to Mr. Homer J. Stockwell and Mr. George A. Lewis for their work on 1952 Conference publications.

Homer J. Stockwell
Acting Secretary

Article XIII - DUTIES OF GENERAL CHAIRMAN

The General Chairman shall be responsible for the administration of the Conference. He shall appoint such committees as he deems necessary for the successful accomplishment of the Conference aims. All funds of the Conference shall be collected, banked, and disbursed by him, and he shall keep an accurate account thereof. This account shall be audited and reported to the membership at each annual meeting.

The General Chairman shall preside at all meetings and shall be a member ex-officio of all committees. In the absence of the General Chairman, the Chairman of the Executive Committee for the area in which the meeting is held shall preside.

Article XIV - REFERENDUMS

A referendum on any proposal may be initiated by the General Chairman, three members of the Executive Committee, or ten members at large. The voting on any question, including removal of officers, shall be conducted by the General Chairman among the eligible voters, except that if the removal of the General Chairman is proposed the Area Chairman of the area where the last meeting was held shall conduct the voting among members of the Executive Committee. A court consisting of the General Chairman and four Area Chairmen shall consider any dispute on procedure and its decision shall be final.

Article XV - AMENDMENTS

This Constitution and By-Laws may be amended at any regular meeting by an affirmative vote of two-thirds of the members present or by a majority vote of all members by a written ballot.

Article XVI - ADOPTION

This Constitution and By-Laws shall become adopted by the affirmative vote of a majority of the members by written ballot of the Western Snow Conference as of November 1, 1953, and shall become effective at the annual meeting in 1954. Balloting shall be conducted by the General Chairman and shall be completed by December 31, 1953.

(Draft as Amended at the Boise Meeting of April 20, 1953.)

R E G I S T R A T I O N

21st Annual Meeting
Western Snow Conference
Boise, Idaho
April 20-22, 1953

Baldwin, Leonard B. - 1124 Deakin St., Moscow, Idaho
Baily, Earl - 207 Federal Building, Boise, Idaho
Banks, F. A. - Coulee Dam, Washington
Barton, Manes - 514 Granite Street, Ashland, Oregon
Bell, Francis M. - U. S. Geological Survey, Denver, Colorado
Blanchard, Francis B. - 2127 Adeline Street, Oakland, California
Brundage, Eric C. - 523 North 61st Street, Seattle, Washington
Buck, Fred E. - Helena, Montana
Butson, Keith D. - 320 Custom House, Portland, Oregon
Codd, Ashton R. - 418 South Black Street, Bozeman, Montana
Conroy, Robert R. - Plant #4, Route 1, Bishop, California
Dean, Willard W. - 9104 Northeast Broadway, Portland, Oregon
Donley, David E. - 3011 Crescent Rim Drive, Boise, Idaho
Dorroh, J. H. Jr. - Soil Conservation Service, Albuquerque, New Mexico
Dugan, H. P. - U. S. Bureau of Reclamation, Denver Federal Center, Denver, Colorado
Eisenlohr, Wm. S. Jr. - U. S. Geological Survey, Washington, D. C.
Erskine, Harlan M. - Box 750, Bismarck, North Dakota
Fisk, Charles C. - 2304 Mountain View Drive, Loveland, Colorado
Frost, W. T. - Post Office Box 1149, Medford, Oregon
Fulcher, M. K. - Box 893, Boulder City, Nevada
Gaensslen, Carl A. - 211 Hillview Drive, Boise, Idaho
Gay, Robert W. - 112 North 2nd Street, Boise, Idaho

Grant, Lewis O. - 12991 East 13th Street, Denver, Colorado
Griner, E. Lee - Snowflake, Arizona
Hall, Norman S. - Soil Conservation Service, Reno, Nevada
Hanson, Archie J. - 2900 Calderwood Lane, Sacramento, California
Harrington, Arthur W. - 523 Federal Building, Albany, New York
Haupt, Harold F. - U. S. Forest Service, Boise, Idaho
Hazen, Charles S. - 507 Tulip Street, Coulee Dam, Washington
Helmers, Austin E. - U. S. Forest Service, Priest River, Idaho
Henderson, Thomas J. - Bishop, California
Hill, Bennett B. - Route 4, Allumbaugh Road, Boise, Idaho
Houston, Clyde E. - Soil Conservation Service, Reno, Nevada
Johnson, Lawrence J. - Hailey, Idaho
Johnson, Walter E. - 825 Trent Avenue, Spokane, Washington
Kidd, Gordon J. A. - Water Rights Branch, Vistoria, B. C.
Kramer, Harry A. - 1339 Hains, Richland, Washington
Kulp, Mark R. - State Engineer, Boise, Idaho
Kurtyka, John C. - 1201 West California, Urbana, Illinois
Lamoreux, Wallace W. - 957 Pinnocchio Drive, Salt Lake City, Utah
Lang, William A. - 601 West 5th Street, Los Angeles, California
Lewis, George A. - Independence, California
McDonald, Charles C. - 207 Federal Building, Tacoma, Washington
Makela, Don R. - 5743 28th Avenue Northeast, Seattle, Washington
Miller, Robert W. - 4532 T. Street, Sacramento, California
Meyers, Victor I. - 624 West C. Street, Moscow, Idaho
Nelson, Morlan W. - Box 835, Boise, Idaho
Newell, Robert J. - 3 Hulbe Drive, Boise, Idaho
Newell, Thomas R. - 429 Federal Building, Boise, Idaho
Oliver, Harry W. - 1815 10th Avenue, Oakland, California
Orem, Hollis M. - U. S. Geological Survey, Portland, Oregon
Ord, Melvin J. - Walla Walla, Washington
Peak, George W. - Boseman, Montana
Pearson, Gregory L. - College Hill - Box D, Logan, Utah
Pedersen, Clarence - 628 Pittock Block, Portland, Oregon
Phillips, Kenneth N. - P. O. Box 3418, Portland, Oregon
Piper, Arthur M. - Post Office Box 3418, Portland 8, Oregon
Potts, H. L. - 2032 South Fillmore, Denver, Colorado
Rockwood, David M. - 500 Pittock Block, Portland, Oregon
Rupp, Vernon, U. S. Weather Bureau, Sacramento, California
Sachs, Milton S. - Bonneville Power Administration, Portland, Oregon
Schermerhorn, Vail P. - 320 Custom House, Portland, Oregon
Seldal, Arthur A. - 207 Federal Building, Tacoma, Washington
Sharp, A. L. - Soil Conservation Service, Portland, Oregon
Shukle, Richard J. - 2931 Wright Street, Sacramento, California
Simons, W. D. - 207 Federal Building, Tacoma, Washington
Sower, Forrest - 1618 North 9th, Boise, Idaho
Stermitz, Frank - 408 Federal Building, Helena, Montana
Stockwell, Homer J. - Colorado A & M College, Fort Collins, Colorado
Strauss, Fred A. - 3554 Bodega Court, Sacramento, California
Summersett, John - 519 Sheridan Road, Walla Walla, Washington
Tarbutton, Victor F. - 4588 South Grant, Englewood, California
Terry, Jack M. - 7320 W. 33rd Avenue, Denver, Colorado
Thomas, Cecil A. - 5320 Overland, Boise, Idaho
Throckmorton, J. R. - 207 Federal Building, Tacoma, Washington
Veach, Fred M. - 207 Federal Building, Tacoma, Washington
Walker, M. G. - 406 Trans. Building, Olympia, Washington.
Washichek, Jack N. - Colorado A & M College, Fort Collins, Colorado
West, J. A. - 1220 Maple Avenue, Tempe, Arizona
Wilson, Jack A. - 1104 Manor Drive, Boise, Idaho
Work, R. A. - Post Office Box 1149, Medford, Oregon
Warnick, Calvin C. - 809 East 8th Street, Moscow, Idaho

APPENDIX

WESTERN SNOW CONFERENCE
FINANCIAL REPORT
APRIL 15, 1953

Check Received from H. J. Stockwell, 5-9-52		$ 1,000.00
Check Received from H. J. Stockwell, 6-11-52		160.21
Income		
Individual Membership Dues	$ 83.50	
Organizational Contributions	1,085.58	
Sale of Reports	157.50	$ 1,326.58
TOTAL		$ 2,486.79
Expenditures		
Sacramento Reports - 1952	$ 449.37	
Snow Surveyors' Forum - 1952	523.41	
Printing	155.57	
Freight and Postage	38.45	
Reprints	25.25	
Miscellaneous	20.00	
Advance on April 1953 Meeting	50.00	$ 1,262.05
BANK BALANCE AND CASH		$ 1,224.74
Obligations		
Snow Sampler Cutter Award - 4-15-54	$ 100.00	
Forum Prizes - 1953	25.00	
Boardman Award - 1953	50.00	
Total	$ 175.00	
Other Assets		
Reports on Hand (1948-1952 Incl., To be sold)	$ 100.00	
Accounts Receivable	80.00	
Total	$ 180.00	

****

Membership Roll	
Individual	250
Contributing	72
Total	322

Reports on Hand	
Reno	1948 - 216
Denver	1949 - 30
Boulder City	1950 - 10
Victoria	1951 - 18
Sacramento	1952 - 55
Total	329

****

Additional contribution made by Southern California Edison Company accounts for a known saving of over $100 in postage for mailing Proceedings and Forum plus an unknown amount for routine correspondence.

Submitted by W. A. Lang - April 15, 1953.

MINUTES OF BUSINESS MEETING
WESTERN SNOW CONFERENCE
BOISE, IDAHO
APRIL 20, 1953

The annual business meeting was called to order by W. A. Lang, General Chairman, Los Angeles, California, acting as presiding officer. Mr. H. J. Stockwell, Fort Collins, Colorado was appointed as secretary for the meeting.

CONSTITUTION AND BY-LAWS

WESTERN SNOW CONFERENCE

Article I - NAME

The name of this organization shall be the "Western Snow Conference".

Article II - PURPOSE

The purpose of the organization shall be to provide an opportunity for individuals and organizations interested in snow and runoff problems from any viewpoint to meet and exchange information for their mutual benefit.

Article III - MEMBERSHIP

There shall be three types of Membership:

(1) Individual - Open to any person having an interest in snow and runoff problems;

(2) Corporate - Open to any firm or agency having an interest in snow and runoff problems; and

(3) Honorary - Open to former members who have made a distinct contribution to Western Snow Conference affairs. Honorary membership awards shall be subject to the unanimous consent of the General Chairman and all four Area Chairmen.

Article IV - DUES

All dues shall be payable on a calendar year basis.

Annual dues for Individual Memberships shall be One Dollar ($1.00) without Proceedings or Two Dollars ($2.00) with Proceedings. All individual members shall be entitled to one copy of the Snow Surveyors Forum.

Annual dues for Corporate Memberships shall not exceed Fifty Dollars and shall include copies of the Proceedings and Snow Surveyors Forum, but not to exceed one copy of each publication for each Two Dollars ($2.00) of contribution.

Article V - MEETINGS

A business meeting shall be held during the month of April each year. The General Chairman (or any three of the four Area Chairmen) and ten members of the Executive Committee shall constitute a quorum for the transaction of any business of the organization.

A general meeting shall be held for the presentation and discussion of reports and papers concerning the subject of snow, runoff, and related problems. This meeting shall be held concurrently with the business meeting and shall be open to all members and interested parties.

Annual meetings shall be rotated through the four areas so that all members shall have a chance to attend these meetings with a minimum of travel expense. The location of the next annual meeting shall be designated at the current annual business meeting.

Registration fees for the annual meeting shall be set by the local arrangements committee with the approval of the General Chairman.

Article VI - ADMINISTRATION

The administration of the Conference shall be vested in a General Chairman and an Executive Committee of twenty members apportioned among the four areas of the Western States, including Alaska and the adjoining Provinces of Canada.

The General Chairman shall be elected by the Executive Committee at the annual business meeting in even-numbered years. He shall be elected from and remain one of the members of the Executive Committee. If he is also an Area Chairman, that office shall be filled by appointment from among the members of the Executive Committee in that area, with the advice and consent of the incumbent Committee members for said are

The Area Chairman of the area where the next annual meeting is to be held is hereby designated to succeed to the office of General Chairman for the unexpired term should said office become vacant. This rule shall apply even if the Area Chairman has served a term as General Chairman.

Article VII - ZONING

For election and assembly purposes, the Western States shall be divided into four areas as follows:

(1) North Continental Area, comprising Montana, Wyoming, Idaho, Alberta, and the adjacent region to the east.

(2) South Continental Area, comprising Colorado, Utah, New Mexico, and the adjacent region to the east.

(3) North Pacific Area, comprising Oregon, Washington, British Columbia, and Alaska.

(4) South Pacific Area, comprising California, Nevada and Arizona.

Article VIII - EXECUTIVE COMMITTEE

The total number of members on the Executive Committee shall not exceed twenty, nor shall more than five be chosen from any one area. In the event of an area having a vacancy for any reason, the General Chairman, with the advice and consent of the incumbent Committee members for said area, may by appointment from within the area fill the vacancy until the next election.

Article IX - NOMINATION

Preceding each election for Executive Committee members, the Chairman of each Area Committee shall, with the consent of the majority of members of the concerned Area Committee, name to the General Chairman eight members of the Conference in that area who, together with the others similarly chosen, shall constitute the nominees for the four areas.

Article X - ELECTION

The General Chairman shall place the names of these nominees on a ballot to be sent to all members in good standing for final balloting, and the five from each area who shall receive a plurality of the total votes shall be declared elected. In addition, the person receiving the most votes in each area shall be declared the Chairman of the Executive Committee for that area.

Members shall vote only for nominees in their area. Ballots shall be mailed eight to ten weeks and returned four to six weeks before the date of the annual meeting in even-numbered years.

Article XI - TERM OF OFFICE

An election shall be held once every two years. The number of consecutive two-year terms that any member of the Executive Committee may serve is not limited. The General Chairman shall be limited to one term in office except as provided in Article VI. The terms of office shall begin with the close of the annual meeting in even-numbered years.

Article XII - PUBLICATIONS

The Executive Committee, at their annual business meeting, shall determine policies regarding all Conference publications, together with their content and distribution.

The Proceedings of the annual meeting shall be published each year. Individual members paying annual dues of Two Dollars ($2.00) shall be entitled to one free copy, and Corporate members shall be entitled to not to exceed one copy for each Two Dollars ($2.00) of contribution. Copies shall be available for general sale at Two Dollars ($2.00) per copy, and such price shall be printed on the fly sheet of the Proceedings.

The Snow Surveyor's Forum shall be published annually in the interest of the field man and shall be distributed free to all members as provided for under Article IV. Extra copies shall be sold at Twenty-five Cents (25¢) per copy to interested agencies for distribution to their field personnel.

Article XIII - DUTIES OF GENERAL CHAIRMAN

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(Draft as Amended at the Boise Meeting of April 20, 1953.)

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21st Annual Meeting
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Bell, Francis M. - U. S. Geological Survey, Denver, Colorado
Blanchard, Francis B. - 2127 Adeline Street, Oakland, California
Brundage, Eric C. - 523 North 61st Street, Seattle, Washington
Buck, Fred E. - Helena, Montana
Butson, Keith D. - 320 Custom House, Portland, Oregon
Codd, Ashton R. - 418 South Black Street, Bozeman, Montana
Conroy, Robert R. - Plant #4, Route 1, Bishop, California
Dean, Willard W. - 9104 Northeast Broadway, Portland, Oregon
Donley, David E. - 3011 Crescent Rim Drive, Boise, Idaho
Dorroh, J. H. Jr. - Soil Conservation Service, Albuquerque, New Mexico
Dugan, H. P. - U. S. Bureau of Reclamation, Denver Federal Center, Denver, Colorado
Eisenlohr, Wm. S. Jr. - U. S. Geological Survey, Washington, D. C.
Erskine, Harlan M. - Box 750, Bismarck, North Dakota
Fisk, Charles C. - 2304 Mountain View Drive, Loveland, Colorado
Frost, W. T. - Post Office Box 1149, Medford, Oregon
Fulcher, M. K. - Box 893, Boulder City, Nevada
Gaensslen, Carl A. - 211 Hillview Drive, Boise, Idaho
Gay, Robert W. - 112 North 2nd Street, Boise, Idaho