

91st Annual Meeting of the Western Snow Conference 2024

Corvallis, Oregon, USA
22 - 25 April 2024

ISBN: 979-8-3313-3928-9

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by Western Snow Conference
All rights reserved.

Printed with permission by Curran Associates, Inc. (2026)

For permission requests, please contact Jon Lea
at the address below.

Western Snow Conference
PO Box 485 Brush Prairie, WA, 98606

Phone: (530) 426-0318
Email: westernsnowconference@gmail.com

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

**PROCEEDINGS OF THE
2024
WESTERN SNOW CONFERENCE**

TABLE OF CONTENTS

ORAL PAPERS

Integrating Sensors Across Spatial and Temporal Scales to Resolve Snow Properties In Idaho's Boise Mountains by Siobhan Ciafone, Tate Meehan, Shad O'Neel, Naheem Adebisi, Karina Kikan, Dominic Filiano, Cameron Wagner, Adam Hunsaker, Jeremy Johnston, Thomas van der Wiede, Thomas Otheim, Josh Butler, Zachary Hoppinen, Wyatt Reiss, Brent Wilder, and HP Marshall.....	1
Retrieval of Snow Surface Properties from Optical Satellite Data by Surface Spectrum Radiative Transfer Modeling By Rune Solberg and Oystein Rudjord	11
Is Snow Intermittence Increasing or Decreasing? Competing Effects of Warming by Adrienne Marshall and Abigail Lute.....	21
Calculating SWE Using Historical Patterns and the Standard Normal Variate by Hanna Besso, Ross Mower, and Jessica Lundquist.....	29
Effects of Climate Warming on the Riverine Component of Estuarine Floods in the Delaware River Basin by Matthew Cooper, Ning Sun, Mark Wigmosta, Hisham Eldardiry, Mithun Deb, Zhaoqing Yang, and Dave Judi.....	35
Water Storage in Perched Aquifers in Temperate Glacier Firm by Erin Pettit, Jason Theis, Joel Brann, Eric Steig, Peter Neff, Doug Clark, Lucy Waghorn, Meghan Sharp, and the Mount Waddington Team	39
Measuring Snow Sublimation in an Upper Colorado River Headwater Basin By Eli Schwat, Daniel Hogan, Jessica Lundquist, Ethan Gutmann, and Julie Vano.....	49
Process-based Assimilation of Remotely Sensed Snow Data into a Distributed Physical Hydrological Model by Eiljah Boardman.....	55
Natural Wildfire Creates Microclimates that Enhance Snowpack by Gabrielle Boisrame.....	65
How Three-dimensional Forst Structure Regulates the Amount and Timing of Snowmelt Across a Climatic Gradient of Snow Persistence by Ravindra Dwivedi, Joel Biederman, Patrick Broxton, Jessie K. Pearl, Kangsan Lee, Bo M. Svoma, Willem J.D. van Leeuwen, Marcos Robleb.....	73
Post-fire Snow Accumulation and Melt Patterns in the Caldor Fire Scar by Marianne Cowherd, Andrew Schwartz, Julia Marks, Gisele Brandt, Lee Kim, Brandon Collins, Scott Stephens, and Manuela Giroto.....	79

Enhancing Predictive Capacity of Post-fire Hydrologic Responses in Snow-Dominated Watersheds of the Pacific Northwest by Kelly Gleason, Sage Ebel, Nani Ciafone, and Devon Vigil.....	83
--	----

POSTER PAPERS

Simulating the Effect of Liquid Water Content on Spectral Albedo Through a Photon Tracking Snowpack Model by Marianna Marquardt, Otto Schmidt, and Alden Adolph.....	91
Meltwater Storage in a High Accumulation, Modest Melt Climate: A Comparison of Snowpack and Observations in Mount Waddington, British Columbia by Lucy Waghorn, Meghan Sharp, and Erin Pettit.....	95
Towards a Cooperative Snow Temperature Survey by Anne Heggli, Dan McEvoy, Rosemary Carroll, Lucas Zukiewicz, and Christine Albano.....	101
Spatial Variability of Temperate Snowpack Properties in Northern Maine From Ground-Penetrating Radar by Keegan Bellamy.....	107
Exploring the Effects of Liquid Water Content on Snow Albedo Through Field Measurements in Southeastern Minnesota by Joseph Becker, Sophia Gonzalez, Lucas Jindra, and Alden Adolph.....	115
Reflections on a Study for a Failed Ski Area Proposal by Clay Brandow.....	121
Quantifying the Ground Snow Deficit Intercepted by Ponderosa Pine Canopy by Mariah Matchopatow, Alec Murphy, Chelsie Fowler, Lovemore Mphamba, and Rand Decker.....	127
Spring Heat Waves Drive Record Western United States Snow Melt in 2021 by Dan McEvoy and Benjamin Hatchett.....	131
Trends in Snow Depth and Canopy Cover in Minnesota Peatland Watersheds, 2022-2023 Winter by Mariel Jones, Salli Dymond, Kristina Hoffman, Stephen Sebertyen, and Xue Feng.....	139

SNOW NOTES

Minutes of the Western Snow Conference Executive Committee Meeting,.....	151
Minutes of the Western Snow Conference Business Meeting.....	155
91st Annual Meeting of the Western Snow Conference – Attendees.....	157