

NNA Track 1: A Systematic Pan-Arctic Analysis of Rain on Snow and Extreme Precipitation Events and their Impacts on Human-Environment Systems

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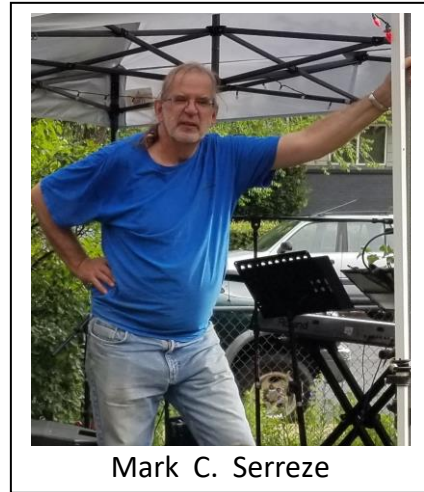
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Project Website Urls & Social Media Accounts:

<https://nsidc.org/rain-on-snow>

Project Objectives: This project, a collaboration between the University of Colorado Boulder, the Alaska Pacific University and the University of Lapland, seeks to better understand the distribution, severity, and changes in the frequency of rain on snow (ROS) events and melt-refreeze events in the Arctic and their impacts, with a focus on hunting and in particular, reindeer herding livelihoods. By integrating with the NSF-funded ELOKA (Exchange for Local Observations and Knowledge of the Arctic) project, long-time research collaborations with Inuit hunters, communities in Northern Alaska, ecological research in Lapland and Russia, and language and cultural translation skills, this study will provide a truly pan-Arctic perspective of the effects of ROS and extreme precipitation events.



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Keywords: Arctic, snow, rain, reindeer, hunting, Lapland, Alaska, Canada

Progress To Date/Future Plans: A project website has been set up. Papers were published on (1) quality of precipitation forecasts from atmospheric reanalyses and (2) ROS events over Alaska. A review paper is in preparation. Coordination has been initiated with the LEO project with Alaska Pacific University. ROS detection algorithms are under development.

Highlights or Expected Outcomes: A Data and Knowledge Hub, serving as the project website and a resource on knowledge regarding Arctic ROS and extreme precipitation events and their impacts, will also become the project's extension to the US Arctic Observing Network.

NNA Community Collaboration and Research Coordination: We are working with partners in Alaska, Canada and Lapland. We want to connect with other groups that may be involved with ungulate studies. ROS events also have impacts on hydrology, permafrost and sea ice conditions, and we want to connect with these groups in addition to climate modelers.

Advice for Overcoming NNA Project Challenges: None yet, provided that travel restrictions ease.