

Geophysical Research Abstracts,
Vol. 10, EGU2008-A-04382, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-04382
EGU General Assembly 2008
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Validation of the AFWA-NASA blended snow-cover product in northern Finland, 2006-2008

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Snow extent and snow water equivalent (SWE) are evaluated in northern Finland for the 2006-2007 and 2007-2008 winters via satellite and in-situ data. Satellite data products used for the analysis include the preliminary U.S. Air Force Weather Agency (AFWA) and the Hydrospheric and Biospheric Sciences Laboratory at NASA / Goddard Space Flight Center (ANSA) blended snow cover product, which utilizes the Moderate-Resolution Imaging Spectroradiometer (MODIS) snow cover product, the Advanced Microwave Scanning Radiometer for EOS (AMSR-E) SWE product, and the QuikSCAT scatterometer data product. The ANSA blended snow-cover data is provided in a single, global, daily, 25 km resolution, user-friendly product. In-situ data used for ANSA blended snow cover product validation was acquired from the Finnish Environment Institute snow courses and the Finnish Meteorological Institute automated weather stations. Snow course data are usually gathered twice a month, on the first and sixteenth of each month, with snow depth and SWE data for intermediary days provided via an interpolation model. Northern Finland validation test sites were selected based on available in-situ data as well as variation in land cover distribution. Land cover information was gathered from the Finnish National Land Survey and the MODIS land cover data products.