



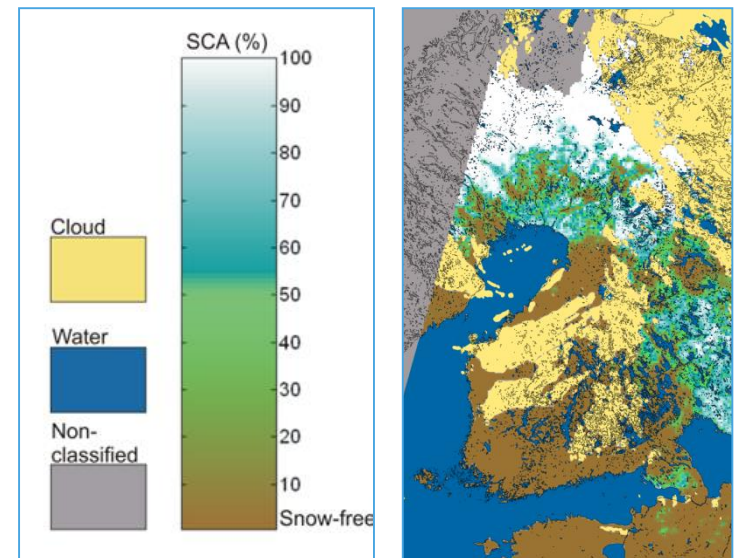
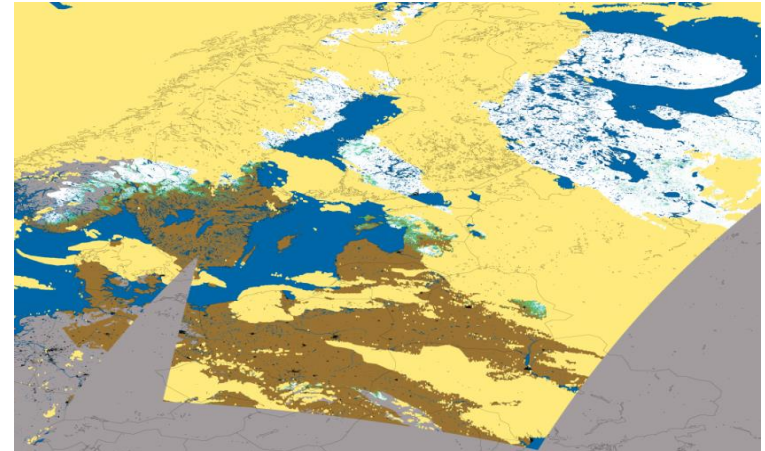
SYKE Product Portfolio

Satellite data products for monitoring environment

Olli-Pekka Mattila, Finnish Environment Institute,
SEN3APP Stakeholder Workshop, Nov 19th 2015

Fractional Snow Cover product (SCAMod)

- Fractional Snow Cover (FSC)
 - Nominal spatial resolution 500m
 - Daily production
- Restricted by cloud cover
- Restricted by season (i.e. amount of day light) → only spring season observed
- Processing at FMI Sodankylä
- Available at:
 - SYKE:
<http://www.syke.fi/fi-FI/Palvelut/Ymparistotietojarjestelmat/Satelliittihavainnot>
 - Cryoland-portal:
<http://neso1.cryoland.enveo.at/cryoclient/>



Snow products

SEN3APP Northern Hemisphere Fractional Snow Cover (FSC) (FMI/SYKE)

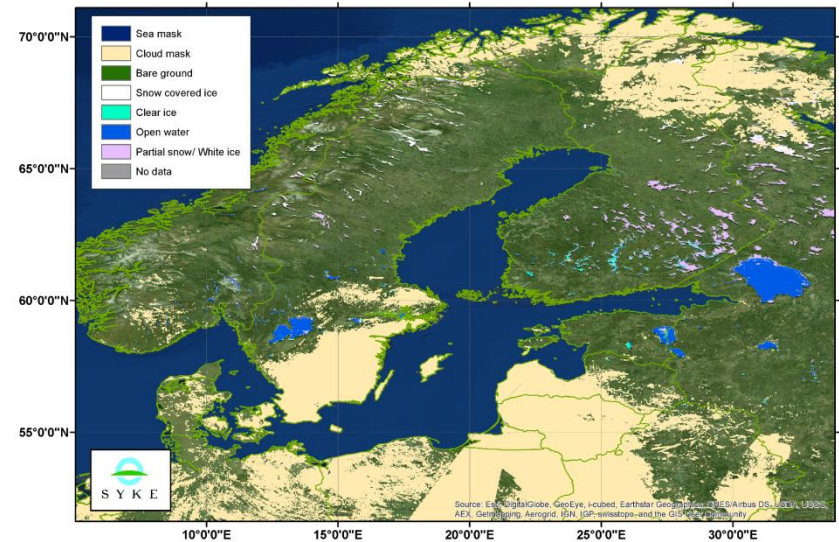


- Built on GlobSnow-heritage (Snow Data record based on SCAMod method applied to ERS-2/ATSR-2 and Envisat/AATSR-data)
- GlobSnow processing system and data archives at FMI-Sodankylä Facility
 - NRT processing used NPP Suomi/VIIRS, 2013 –
 - SCAMod feasible to various optical sensors → To be Implemented for Sentinel-3 as soon as available
- AOI products (continental, regional, national) may be extracted from the NH snow maps
- Complements the previous records generated with greater temporal coverage but a lower spatial resolution (AVHRR 1980-2014) and records with similar resolution but a shorter time series :MODIS 2001-2014; (A)ATSR 1995 - 2012
- It utilizes a unique algorithm for direct (not from binary data) FSC retrieval, particularly considering also the forest areas

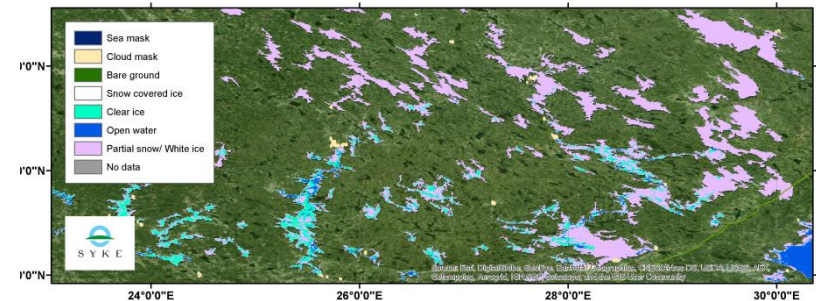
Lake ice product

- The interpretation reduced to three class classification:
 1. Full snow covered ice
 2. White ice/partial snow cover
 3. Open water
 - Currently based on Terra/MODIS
 - Sentinel-3 SLSTR/OLCI
- Daily product for melting season
- Covering entire Finland and Baltic Sea area
- Restricted by
 - cloud cover
 - season (i.e. amount of day light) → only spring season observed
- Available at:
 - Cryoland-portal:
<http://neso1.cryoland.enveo.at/cryoclient>

Lake Ice Extent (SYKE): 25.-26.3.2014

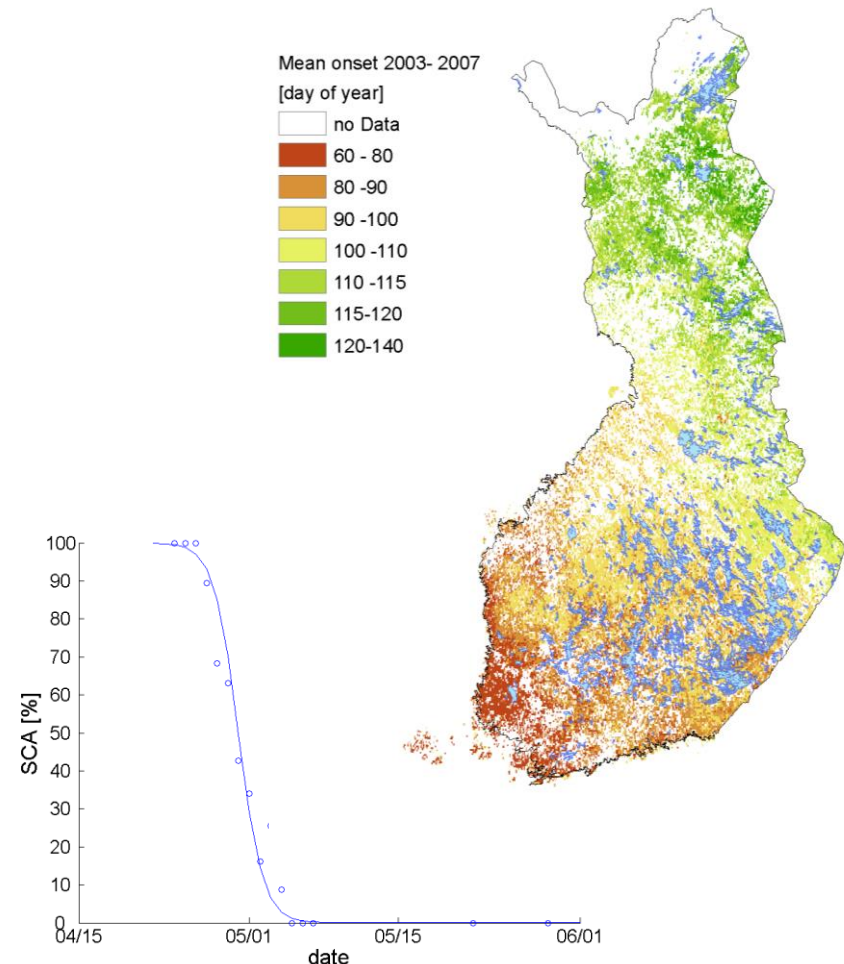


Lake Ice Extent (SYKE): 25.-26.3.2014



Phenology product

- The growing season for vegetation from satellite datasets:
 - Using time-series of environmental variables/indicators (FSC, NDVI, NDWI)
 - Start of growing season for coniferous and deciduous forests
 - End of growing season for coniferous and deciduous forests
 - Length of growing season
- Currently research oriented
- ➔ Development towards more operational status
- Available on request



Land Cover/Change (SYKE/Finland)

Land Cover and Land Cover Change

- National CORINE Land Cover (2000, 2006, 2012)
 - 30m resolution
 - Generalized for European Land Cover 25 ha mmu
- Land Cover change, respectively
- Available: at OIVA Environment Spatial Data Service (<https://www.wp2.ymparisto.fi/scripts/oiva.asp>)



Finnish National CORINE Land Cover 2006