

Switzerland

Federal Office of Topography swisstopo

Monitoring drought with unprecedented precision for climate resistance in Switzerland

“The dissemination of tailor-made near-real-time satellite products through our robust, open-access geospatial infrastructure allows us to address the challenges of drought monitoring with unprecedented precision and speed at the national level.”

Fridolin Wicki

Director, Federal Office of Topography swisstopo

Earth observation data is improving climate resilience in Switzerland by enabling the early detection and management of drought conditions.

The operational national drought monitoring service is underpinned by the swissEO suite of near-real-time Sentinel-2 satellite open data products developed by swisstopo. As a result, Switzerland is monitoring drought with unprecedented precision and speed which provides an early warning of conditions to support planning and response.

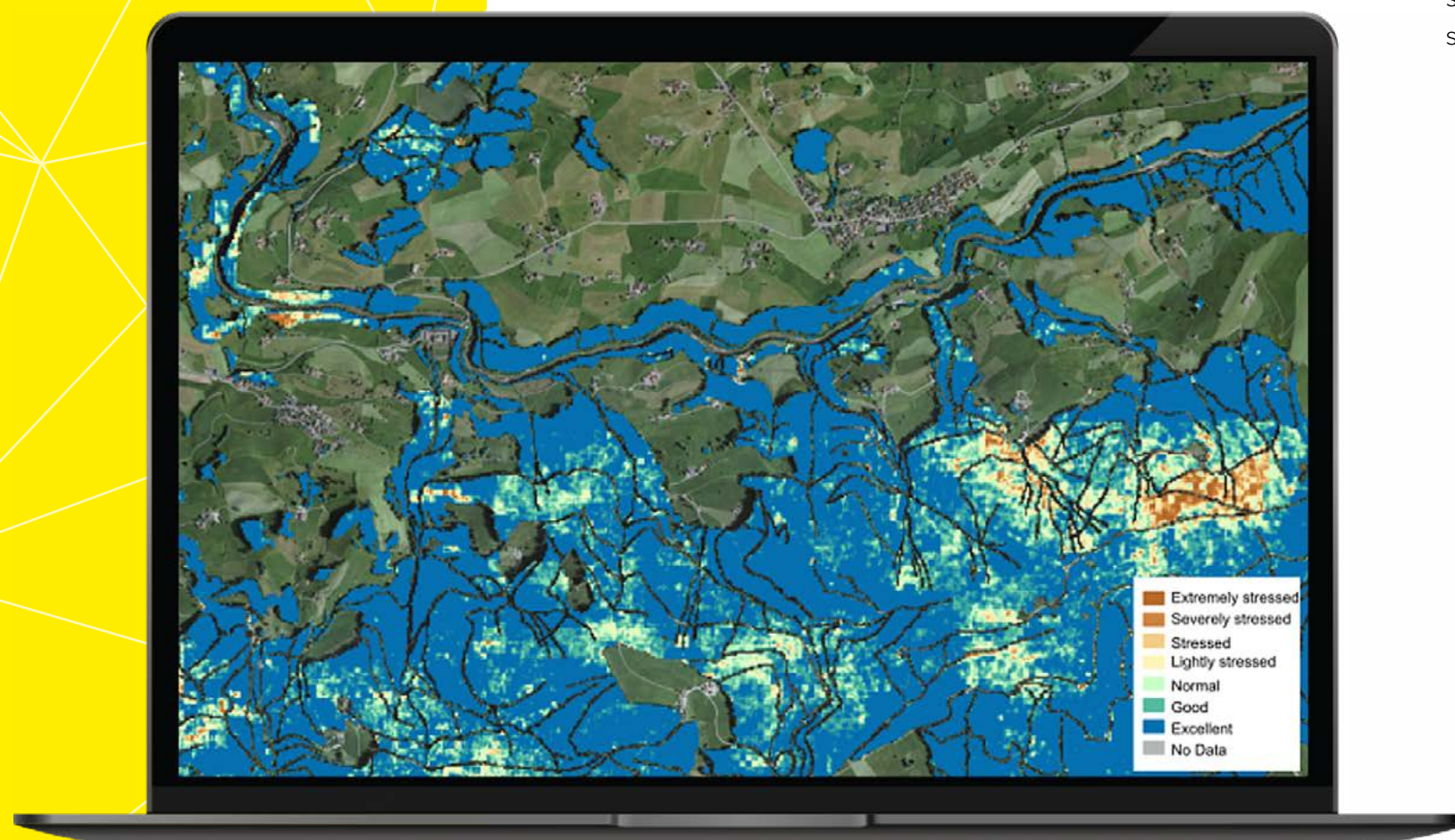
Together with the Federal Office of Meteorology and Climatology MeteoSwiss and the Federal Office for the Environment, swisstopo processed Sentinel-2, Landsat and Meteosat satellite data to create the analysis-ready open data products in cloud-native formats. Key steps included advanced cloud masking, terrain shadow detection, and precise geolocation.

The swissEO suite includes swissEO VHI which shows the current health status of vegetation as observed by satellites. This enables vegetation health assessment using Sentinel-2-based NDVI and Meteosat land surface temperature, including historical data covering the climate reference period 1991-2020. Users can also access swissEO S2-SRI which shows land surface reflectance in a spatial resolution of 10 metres.



More information:

<https://www.swisstopo.admin.ch/en/satellite-images-swisseo>



Benefits

- Provides early warning of drought conditions to improve drought preparedness.
- Supports informed decision-making with accurate, high-resolution nationwide data.
- Enables efficient allocation of agricultural and forestry resources during droughts.
- Improves environmental monitoring with daily updates and historical comparisons.
- Facilitates research with open data and interoperable formats.
- Strengthens collaboration by integrating geospatial and meteorological expertise.
- Promotes climate resilience by addressing the impacts of prolonged droughts.
- Promotes transparency and accessibility through open-source tools and cloud-native solutions.