

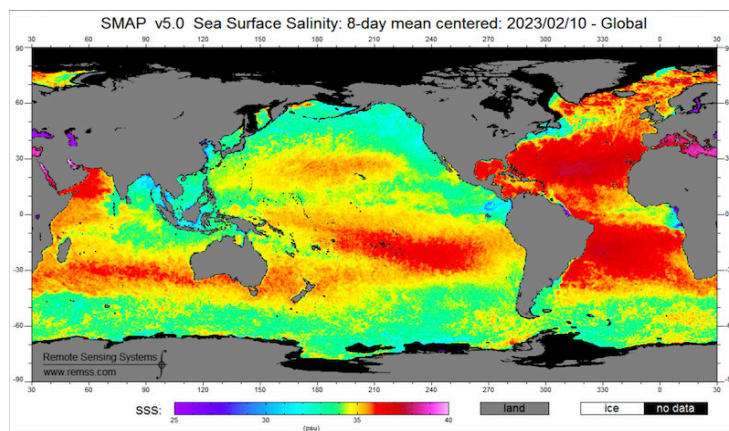
Sea Surface Salinity with Sea Ice Mask

Satellite Needs Working Group - Solution Fact Sheet

The Satellite Needs Working Group (SNWG)-2020 biennial assessment identified sea surface salinity (SSS) as a key observable across civilian federal agencies, including the need for low-latency measurements near the sea-ice edge. To address this need, NASA's SNWG Implementation TEam (NSITE) representatives from Remote Sensing Systems (RSS) released a new version (V5) of the Soil Moisture Active Passive (SMAP) mission sea surface salinity (SSS) data products, sponsored by the Ocean Salinity Science Team (OSST). This new version, and those that follow, includes three RSS SMAP SSS products that contain an additional flag indicating the number of pixels that are ice versus ocean, allowing for salinity values to be produced closer to the sea ice edge with increasing uncertainty, rather than removing the SSS value when sea ice is detected. Because SSS can influence various ocean-atmosphere processes, these updated products will advance not only our understanding of ocean salinity, but also of the global water cycle and climate conditions.

Mean SSS values from the SMAP RSS SSS Version 5.0 product. Red/yellow indicates higher salinity values measured in practical salinity units (psu). The average ocean salinity is 34.7 psu (green areas).

Credit: Remote Sensing Systems



Scientific & Societal Benefit

- Allows end users to select SSS values based on the percentage of sea ice in the measurement
- Low-latency measurements of SSS near the sea-ice edge enable the development and improvement of ocean forecasting systems
- Increased precision of SSS measurements provides more reliable insight into changes in ocean circulation and the global water cycle to enhance environmental and climate predictions
- Improves our understanding of salinity-influenced processes and their effect on the health of marine ecosystems, including coral reefs and fisheries

NASA's SNWG Implementation TEam (NSITE)

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Data Characteristics			
Products	Sea Surface Salinity	Sea Surface Salinity NRT	Sea Surface Salinity 8-day Running Mean
Platform	Soil Moisture Active Passive (SMAP)		
Instrument	L-band Radiometer		
Processing level	2C		3
Temporal coverage	April 2015 - Present	July 2022 - Present	March 2015 - Present
Temporal Frequency	Hourly to < Daily		Weekly to < Monthly
Latency	4 days	5 hours	7 days
Spatial coverage	Global		
Spatial resolution	70 km default (40 km available)	70 km 0.25 × 0.25 degree grid	70 km default (40 km available) 0.25 × 0.25 degree grid
Data format	NetCDF4		

How do I access this data?

The Sea Surface Salinity with Sea Ice Mask data products are distributed through NASA's ESDIS archive, including data access and documentation. In addition to the V5 products and those that follow, this link also includes the previous V4 products, which do not include the sea-ice flag.



SSS Datasets

Where can I find more information?

More information on Sea Surface Salinity with Sea Ice Mask products is available on this solution's webpage.



Sea Surface Salinity Webpage