

Sea Surface Temperature

ESSENTIAL CLIMATE VARIABLE (ECV)
FACTSHEET



ECV IN BRIEF

Domain: Ocean
Subdomain: Physical
Scientific Area: Energy and Temperature
Products: Sea Surface Temperature



Sea Surface Temperature

Sea-surface temperature (SST) is a vital component of the climate system as it exerts a major influence on the exchanges of energy, momentum and gases between the ocean and atmosphere. SST largely controls the atmospheric response to the ocean at both weather and climate time scales. Daily variations in SST can exceed 3 degrees Celsius and could alter the surface energy budget by more than 10 Wm⁻² over the tropics and subtropics. Therefore, the SST and horizontal gradients in SST are also important for coupling with the atmosphere for sub-seasonal to seasonal prediction timescales. The spatial patterns of SST reveal the structure of the underlying ocean dynamics, such as, ocean fronts, eddies, coastal upwelling and exchanges between the coastal shelf and open ocean.

ECV Products¹

PRODUCT	REQUIREMENTS				
	FREQUENCY	RESOLUTION	REQUIRED MEASUREMENT UNCERTAINTY	STABILITY	STANDARDS/ REFERENCES
SEA SURFACE TEMPERATURE	Hourly to weekly	1-100 km	0.1 K over 100 km scales	< 0.03 K over 100 km scales	See EOVS Specification at www.goosoocean.org/eov

¹ Current Products and Requirements as in the Implementation Plan 2016 (GCOS-200). GCOS is reviewing and will update the requirements as part of their contribution to the UNFCCC Global Stocktake. More information on: climatedata.wmo.int.



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Data Sources²

- ▶ Group for High Resolution Sea Surface Temperature:
<https://www.ghrsst.org/>

Ensemble Median SST

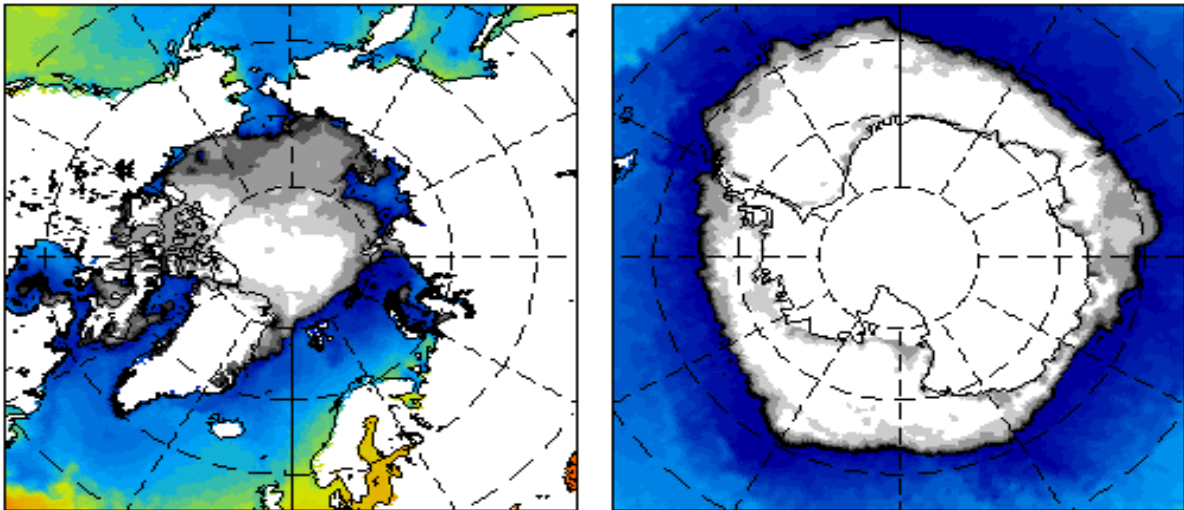
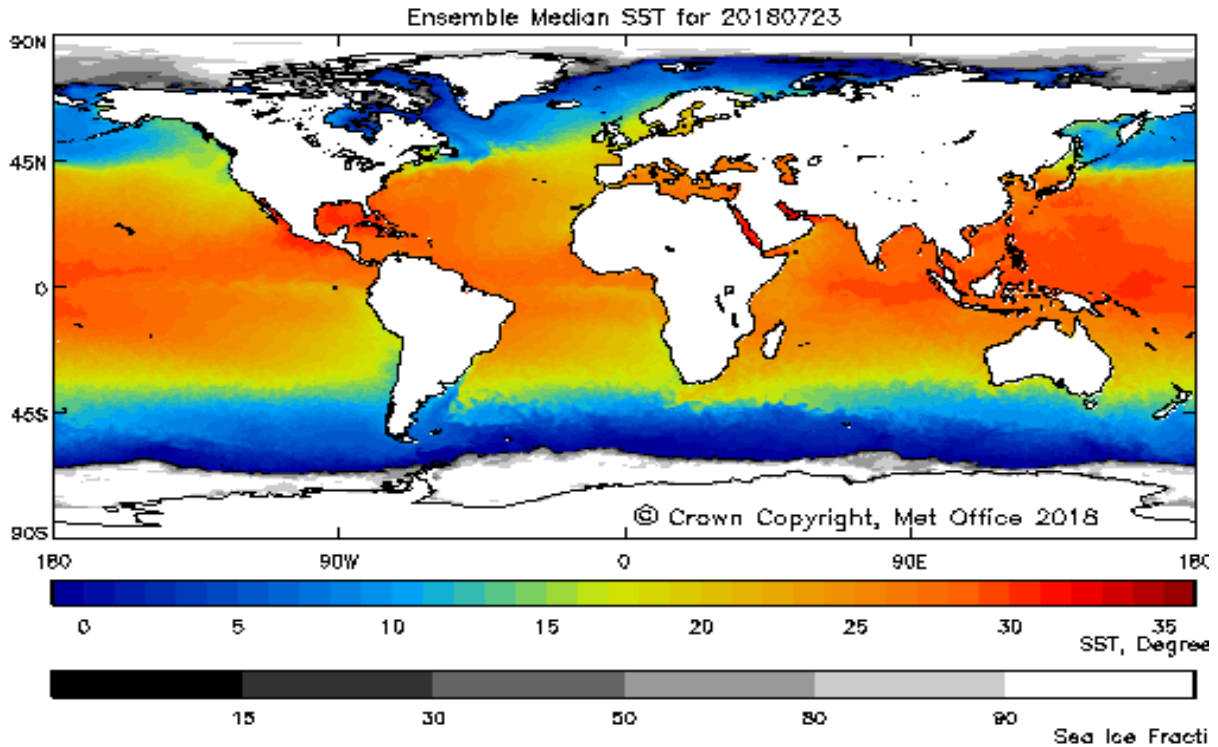


Figure : Ensemble median Sea Surface Temperature for 23/07/2018. Source: www.ghrsst.org

² This list provides sources for openly accessible data sets with worldwide coverage for which metadata is available. It is curated by the Ocean Observations Physics and Climate panel (OOPC) and reflects the status as of 10/2018. The list does not claim to be complete. Anyone with a suitable dataset who would like it to be added to this list should contact GCOS.