

climate change initiative

→ SEA SURFACE TEMPERATURE

The “globally local” question

C J Merchant





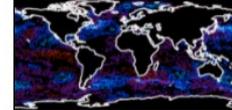
A local user's response to local data

“Now I won't have to deal with global data or calculate means, it's all done for me! Yay! 😊”



Sea Surface Temperature Data

Region Service



Obtain L4 sea and ocean data at 0.05 degree resolution for a particular bounding box.

You may use this page to request sea surface temperature (SST) data from the European Space Agency Climate Change Initiative (climate.esa.int/en/projects/sea-surface-temperature/) in time/space averaged form. The underlying data are from the CCI climate data record v2.1, described in the paper referenced below.

Ongoing extension of this dataset over time is supported by the Copernicus Climate Change Service (climate.copernicus.eu). This region service is supported by the National Centre for Earth Observation (www.nceo.ac.uk).

The dataset will be prepared in netcdf4 format at the temporal resolution and spatial bounding box specified in the request form below.

1. Enter your email address.*
2. Define parameters for your region job.
3. Consent to your email address being temporarily stored and accept the license for using the output data.
4. Submit the request.

* You will be notified by e-mail when the job is complete. Link(s) will be provided in this e-mail to download the output data file(s).

Click on the [?](#)s for additional explanation.

E-mail address

Show My Current Jobs

Job Parameters

Time Resolution [?](#)

5 day periods within month

Start Date [?](#)

Year Month Day

End Date [?](#)

Year Month Day

Longitude of bounding box (degrees east) [?](#)

Latitude of bounding box (degrees north) [?](#)

Width in degrees [?](#)

Height in degrees [?](#)



Exclude data with sea ice fraction above threshold [?](#)

Include post-hoc SST bias adjustments [?](#)

Generate time series SST or Argo only [?](#)

Generate sea-ice fraction [?](#)

Error Correlation in Time (Days) [?](#)

Sea Ice Exclusion Threshold % [?](#)

surftemp.net

(Also, time series and global regridding services, all with uncertainty propagation.)



“Globally local” priority for COMPASS



- Current data and accessibility practices in CCI are oriented to global data users, such as for climate modelling. Not a bad thing, but ...
- ... not the only context where climate data records are relevant
 - climate adaptation, resilience and finance, environmental management, ...
 - these are often/usually “local” applications (national and smaller)
 - and require interpretation of multiple types of data
- Practically, what should COMPASS do to maximise the ability of a user
anywhere in the world
to exploit multivariate CCI data at an appropriate resolution
with their local data and application,
using their normal tools ?

Experience of getting into EO for a local application: what would have made it easier? – **the peatland demonstrator**



Fred Worrall
Department of Earth Sciences,
Durham University

So what – what have I learnt?

- **Bad news**
 - Data standards that are not standard
 - Data standards that are not used
 - Promised a lot, delivers less
 - Spatial scale more exciting than temporal scale
 - Development dictated by EO not by users
 - You do not treat your product as scientific data
- **Good news**
 - Huge amount of data over large areas
 - The potential is great
 - We need this sort of technology
 - We treat your product as experimental data



Uniting UK space-enabled climate expertise and services with geospatial excellence

Donna Lyndsay

Space 4 Climate Vice Chair and OS Innovation lead



Climate data, insight and our customers

- Local scale climate data is key for our customer base – OS is trying to understand how we can translate the climate data to meet our customer needs without misinterpretation or misleading insights.
- Understanding use cases – enabling our customer bases to understand when, where and how data is used is key to supporting their needs.
- Barriers to date – limited guidance in how to interpret the units for the different parameters or the geospatial projection for the data makes it complex to use in a non-EO specialist world.



ORDNANCE SURVEY

See A Better Place.

Thank you

Donna Lyndsay
Innovation Lead

[Ordnance Survey | See A Better Place](#)

Donna.Lyndsay@os.uk



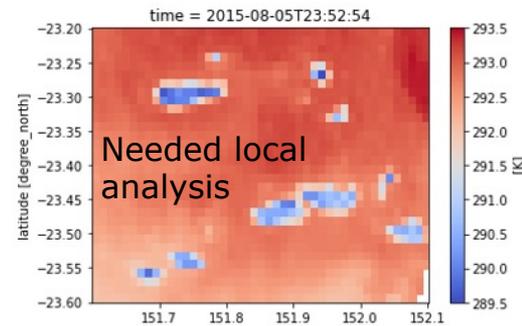
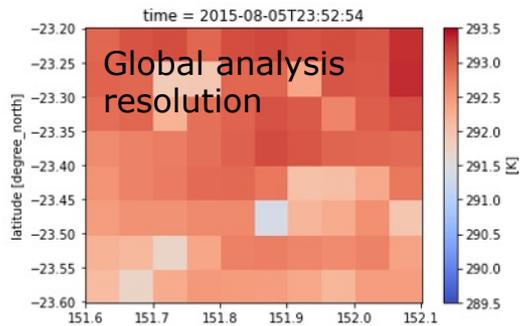
Not a new challenge entirely



- Some CCI datasets are already “globally local”
 - E.g. Glaciers.
 - Sea-level CCI has specific efforts in coastal zones globally
- Big overlaps with discussion of
 - analysis-ready data and data cubes
 - ODP portal and KE CATE
 - digital twins (e.g., climate context for infrastructure)
 - EO Exploitation Platform Common Architecture
 - Google Earth Engine and EarthBlox



- How much effort would it be to gather (for example) SST, OC, SLA (from CCI) and SSI (from SAFs) across a 50 km coastal zone plus meteorological reanalysis data on a common, nationally normative map projection in a GIS system?
- Where are there opportunities for CCI CDRs could be obtained “globally locally” at scientifically relevant, higher resolution than is feasible globally?
 - “SST CCI coastal”





Breakout discussions



- Random breakout rooms. Select a chair and rapporteur.
- Three questions to respond to (next slide)

- Grab Qs now! Bottom of this page (copied to chat also):
- <https://climate.esa.int/en/news-events/11th-cci-colocation-2021/>
-
- Rapporteurs:
- Please note main conclusions on all questions and e-mail in the notes for consolidation
- For feedback today, verbally report the one or two most surprising or challenging points that arise



- What can “global” CCI teams learn from ECV teams who have worked on “inherently local” ECVs? or existing ARD experience?
 - specific examples
- Should a practical “globally local” strategy for COMPASS focus on (i) preparing new forms of data, or (ii) creating new services of access to and transformation of existing forms of CCI data?
 - specific examples and reasons
- What are the key considerations external to the CCI/COMPASS programme that should shape a “globally local” strategy?
 - what specifically and why?