HadOBS observation based climate data from the Met Office Hadley Centre

www.metoffice.gov.uk/hadobs/
### Kate Willett

What is HadOBS?

- Climate quality data for monitoring produced by the Met Office Hadley Centre, often in collaboration with other organisations

- Freely accessible climate data (for research) for a range of Essential Climate Variables (surface temperature, ocean temperature and salinity profiles, sea ice concentration, surface humidity, sea level pressure, wind speed/direction, precipitation, past weather code)

- Quality controlled, homogenised / homogeneity checked, uncertainties explored or quantified where possible

- Version controlled, updated, available in a range of formats where possible
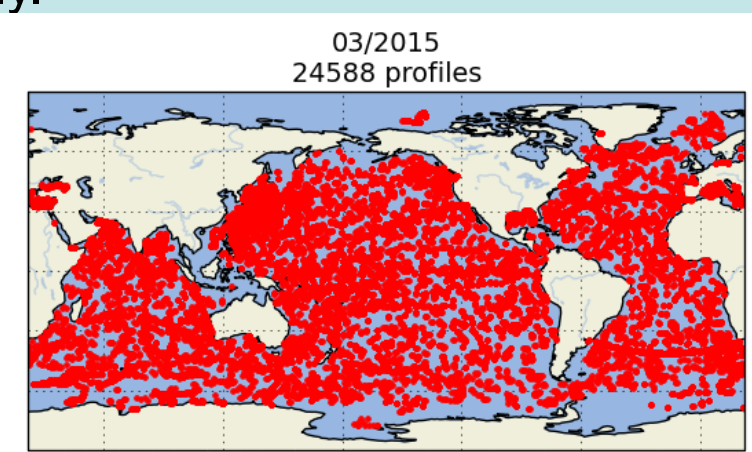

GRIDDED GLOBAL MONITORING: MARINE

HadSST3:
HadSST3 is a global gridded monthly mean anomaly (1961-1990 climatology) sea surface temperature dataset from 1850 to present Adjustments have been applied to minimise the effects of changes in instrumentation Uncertainty is explored through an ensemble approach. Updates are monthly.
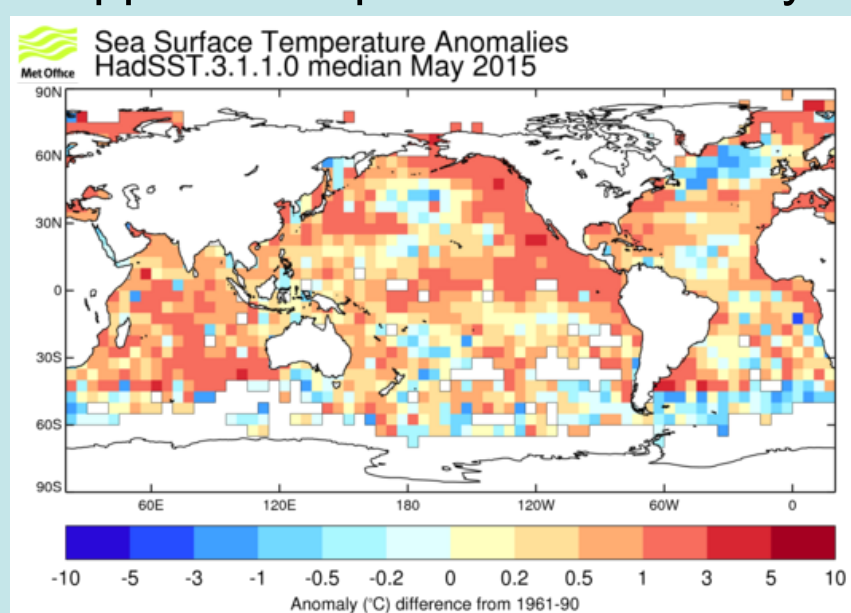
HadISST:
HadISST is a monthly mean anomaly (1961-1990 climatology) gridded and interpolated sea ice concentration and sea surface temperature dataset from 1870 to present, utilising satellite and in situ data. Updates are monthly.
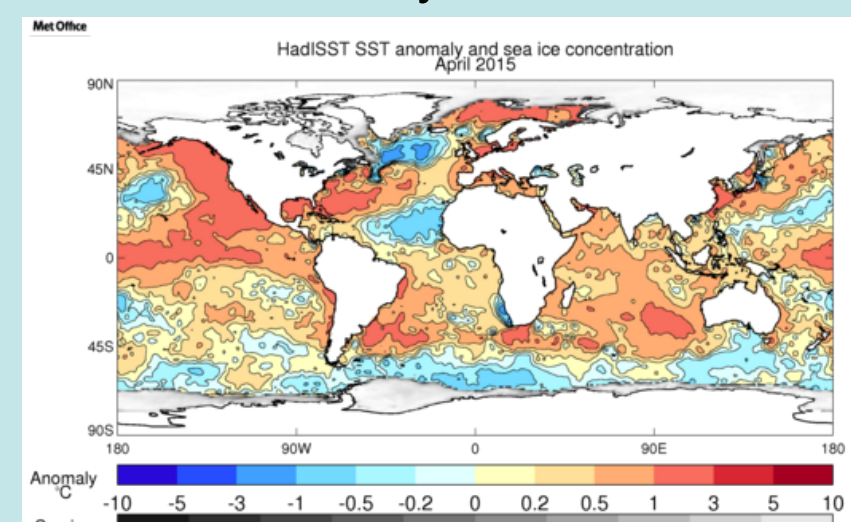

EN4:
EN4 is a database of quality controlled subsurface ocean temperature and salinity profiles with quality information and monthly objective analyses with uncertainty estimates from 1900 to present. Updates are monthly.


GRIDDED GLOBAL MONITORING: OTHER

HadCRUT4 & CRUTEM4:
HadCRUT4 is a global gridded monthly mean anomaly (1961-1990 climatology) surface temperature product from 1850 to present, combining HadSST3 over ocean and CRUTEM4 over land. CRUTEM4 data have been quality controlled and homogeneity checked. Uncertainties are assessed and explored through an ensemble approach. Updates are monthly.
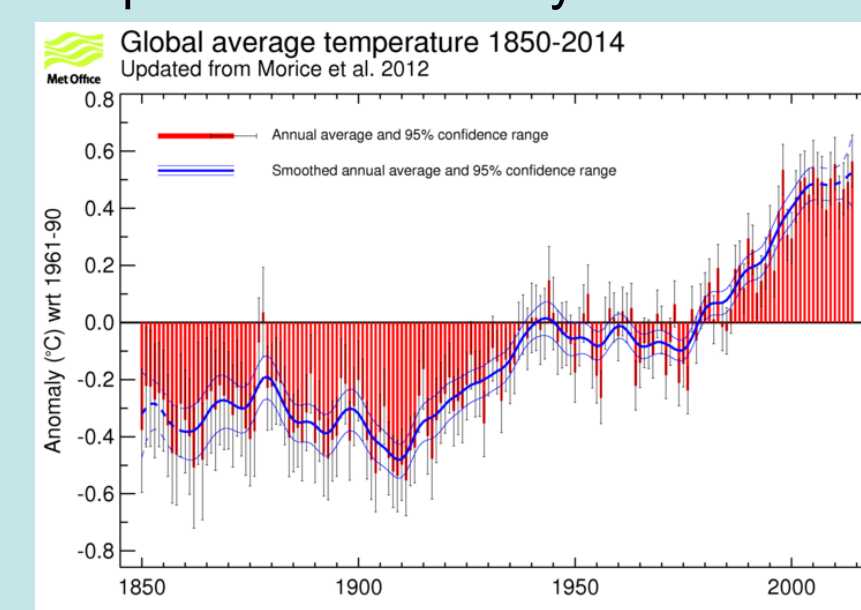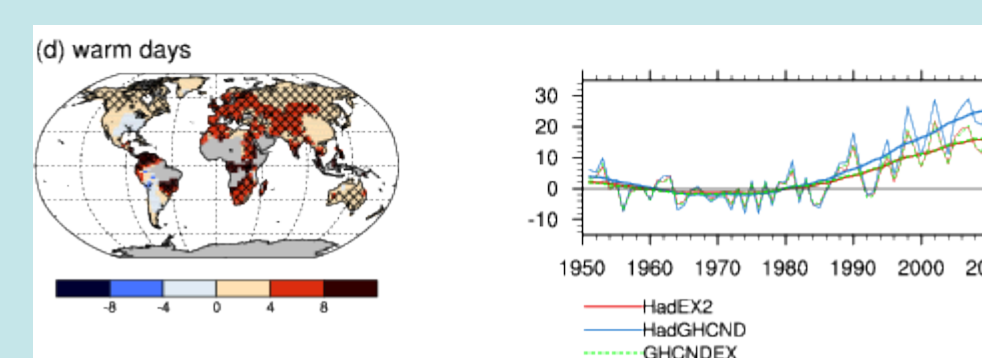

HadISDH:
HadISDH is a global gridded monthly mean anomaly (1976-2005 climatology) land surface humidity product over land from 1973 to present. The data have been quality controlled and homogenised and uncertainties are estimated. Actual and climatology values are available. It includes specific humidity, relative humidity, vapour pressure, dewpoint temperature, wet bulb temperature, dewpoint depression and temperature. Updates are annual.
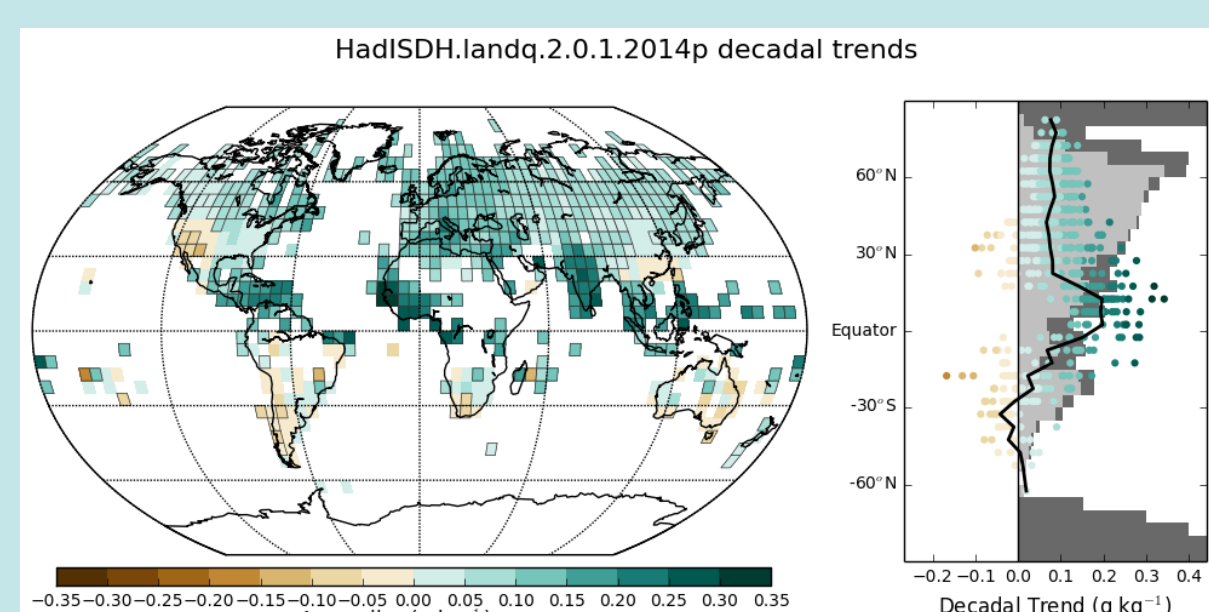

HadSLP:
HadSLP is a global gridded interpolated monthly mean sea level pressure product over land and ocean from 1850 to present.


DATA FOR EXTREMES

HadEX2:
This global land-based gridded and interpolated climate extremes dataset was produced collaboratively (lead by UNSW). It comprises of 27 indices of temperature and precipitation on a 2.5° x 3.75° grid from 1901 to 2010.

HadISD:
HadISD is a global sub-daily dataset where station selection criteria for length and a suite of quality control tests have been run on the major climatological variables. The data spans 1/1/1973 to the end of 2014 and include: temperature, dewpoint temperature, sea-level pressure, wind speed and direction, cloud data (total, low, mid and high level), past significant weather and precipitation depth.
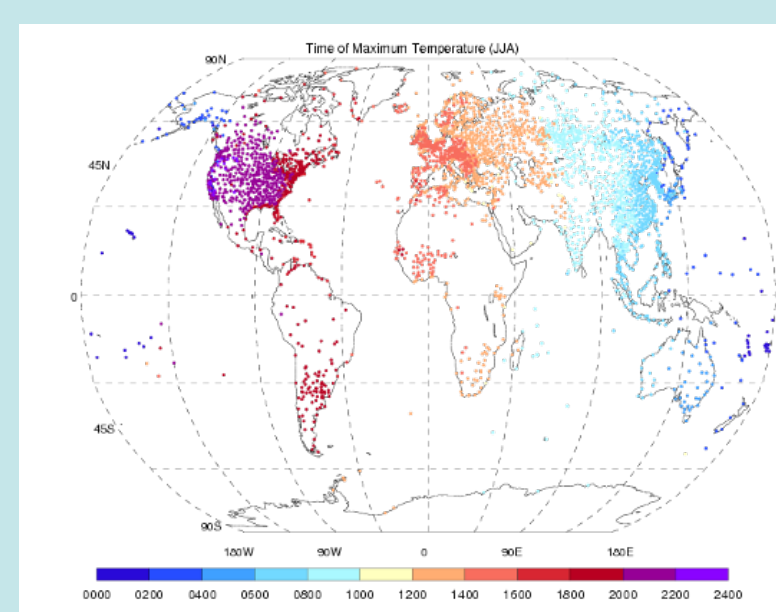

HadGHCND:
 HadGHCND is a gridded and interpolated daily maximum and minimum temperature anomaly (1961 to 1990 climatology)dataset on a 2.5° by 3.75° grid from 1950 to present.
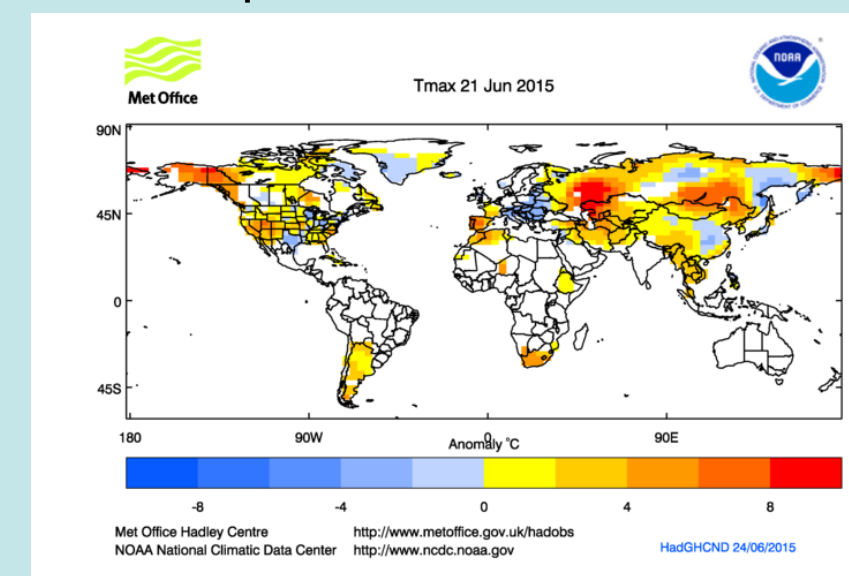

UK CLIMATE DATA

HadCET:
HadCET is the longest instrumental record of temperature in the world. It is updated monthly and represents Central England Temperature (roughly triangular area enclosed by Lancashire, London and Bristol). Since 1974 the data have been adjusted to allow for urban warming. The mean daily data series begins in 1772 and the mean monthly data in 1659. Mean maximum and minimum daily and monthly data are also available, beginning in 1878.
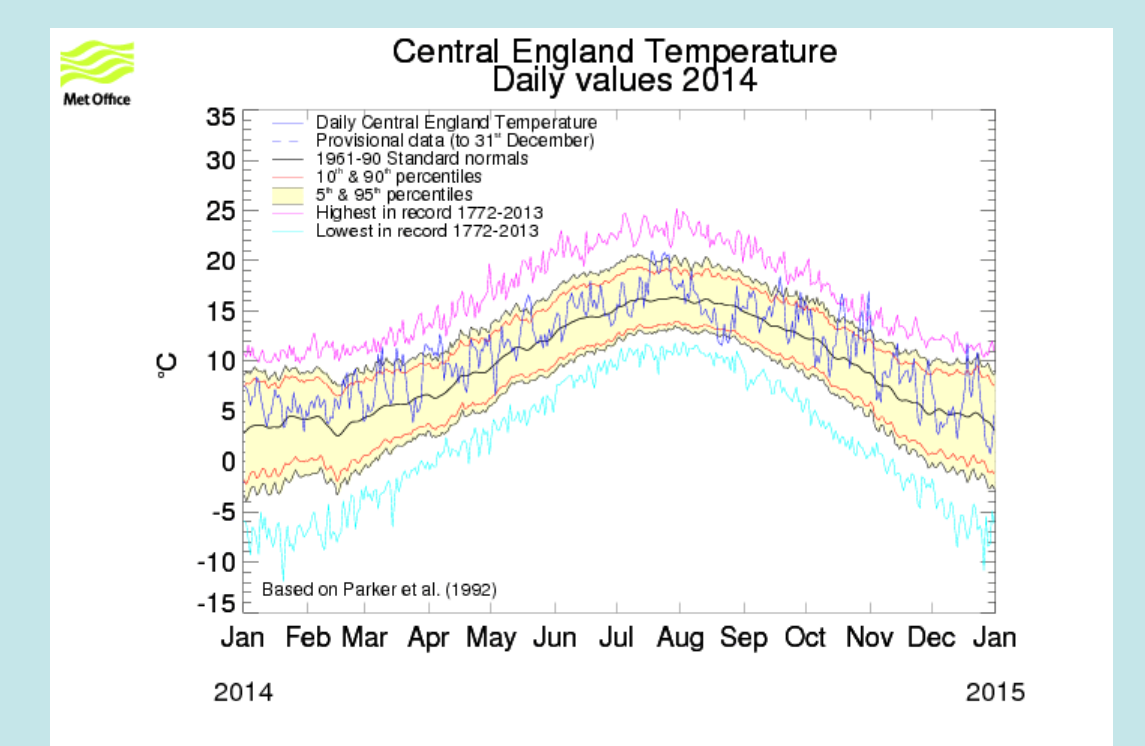
HadUKP:
HadUKP present regional UK precipitation. The monthly England & Wales Precipitation (EWP) series, the longest in the world, goes back to 1766, whereas the monthly sub-regions series begin in 1873 for England & Wales, and in 1931 for Scotland and Northern Ireland. All the daily series begin in 1931. A full quality control is performed on the 5th of each subsequent month, allowing data from the most recent six months to be updated.
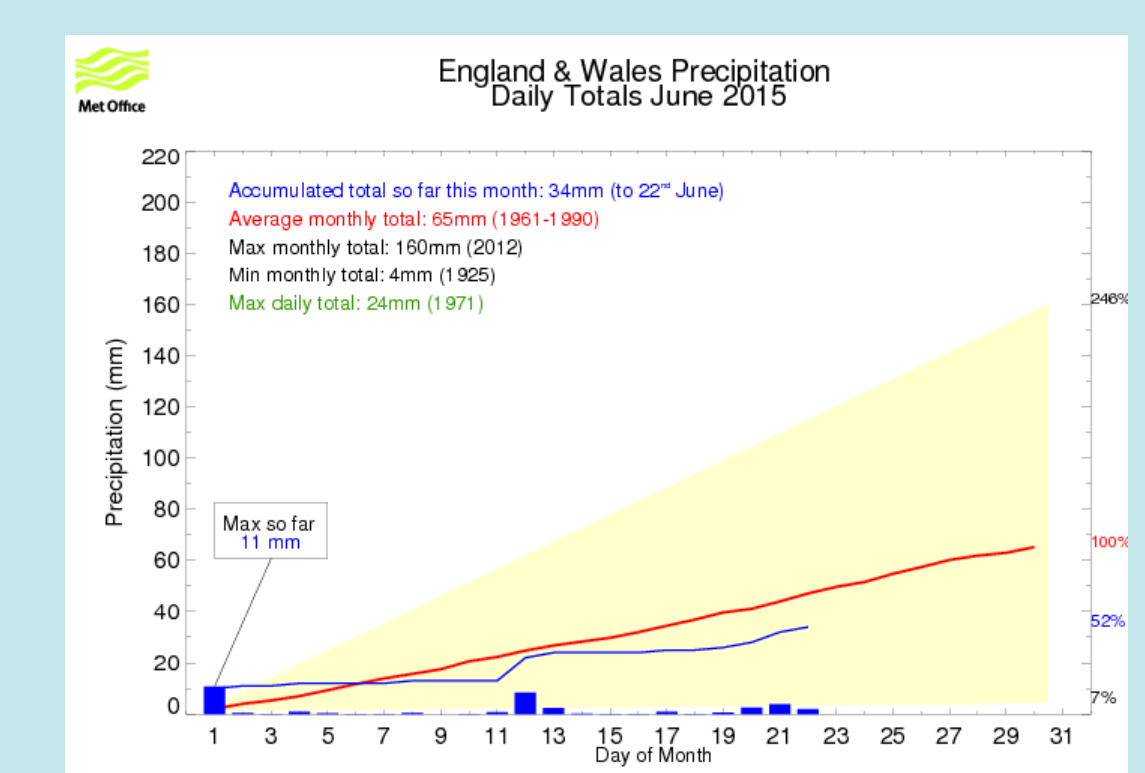
HadOBS website

- Data are served via a homepage with background information, peer reviewed reference material, version control.
- Issues, bug fixes etc. are noted clearly.
- Files are usually available in ASCII and netCDF, and sometimes pp format.
- File formats are not identical across products.
- NetCDF files can contain multiple variables.
- In some cases, time series and figures are available for key diagnostics.
- There are no data selection or plotting tools available.
- Data download does not require registration.

BADC's CEDA Catalogue

We plan to have our key files for our datasets hosted at the British Atmospheric Data Centre

- Homepages will follow a common format with pertinent user information and link back to HadOBS
- Will utilises Project > Collections > Dataset structure with DOIs
- Files will be in CF-compliant netCDF format
   - requires sensible DRS design
   - requires sensible file component design
   - may require new CF standard names
- Data should be easily searchable
- Data will be easily accessible and subset-able through OPeNDAP
- Data versions will be securely stored

ESGF for CLIPC portal

We plan to make our key datasets available through the Climate Information Portal for Copernicus.

- We will utilise the ESGF data format
- File availability and format may differ slightly to that held in the CEDA catalogue to serve the needs of CLIPC
- Files will be in CF-compliant netCDF format
   - requires sensible DRS design
   - requires sensible file component design
   - may require new CF standard names
- Data should be easily searchable
- Data will be easily accessible, subset-able and intercomparable through CLIPC portal tools
- Data versions will securely stored

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