CLIWOC: CLImatological database for the World's OCeans 1750-1850

- European Community Project
- Argentina, Netherlands, Spain, UK (University of Sunderland and University of East Anglia)

International Workshop on Advances in the Use of Historical Marine Climate Data: Boulder, Colorado, USA, January 2002

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CLIWOC objectives

- Produce and make freely available for the scientific community the world's first daily oceanic climatological database for 1750-1850.
- Realise the potential of the database to provide a better knowledge of oceanic climate variability over the study period.
  - Prepare summary and derivative measures from the database to complement and integrate with other contemporary series.
  - Use the database to determine the character and scale of oceanic climatic change and variability at various time scales during the final stages of the pre-industrial period.
  - Extend the NAO record by reference to derived information from the database.
- Use the information to extend and enhance existing oceanic-climate databases.
- Disseminate the project's findings and stimulate interest and awareness so as to foster further development and realise the scientific potential.

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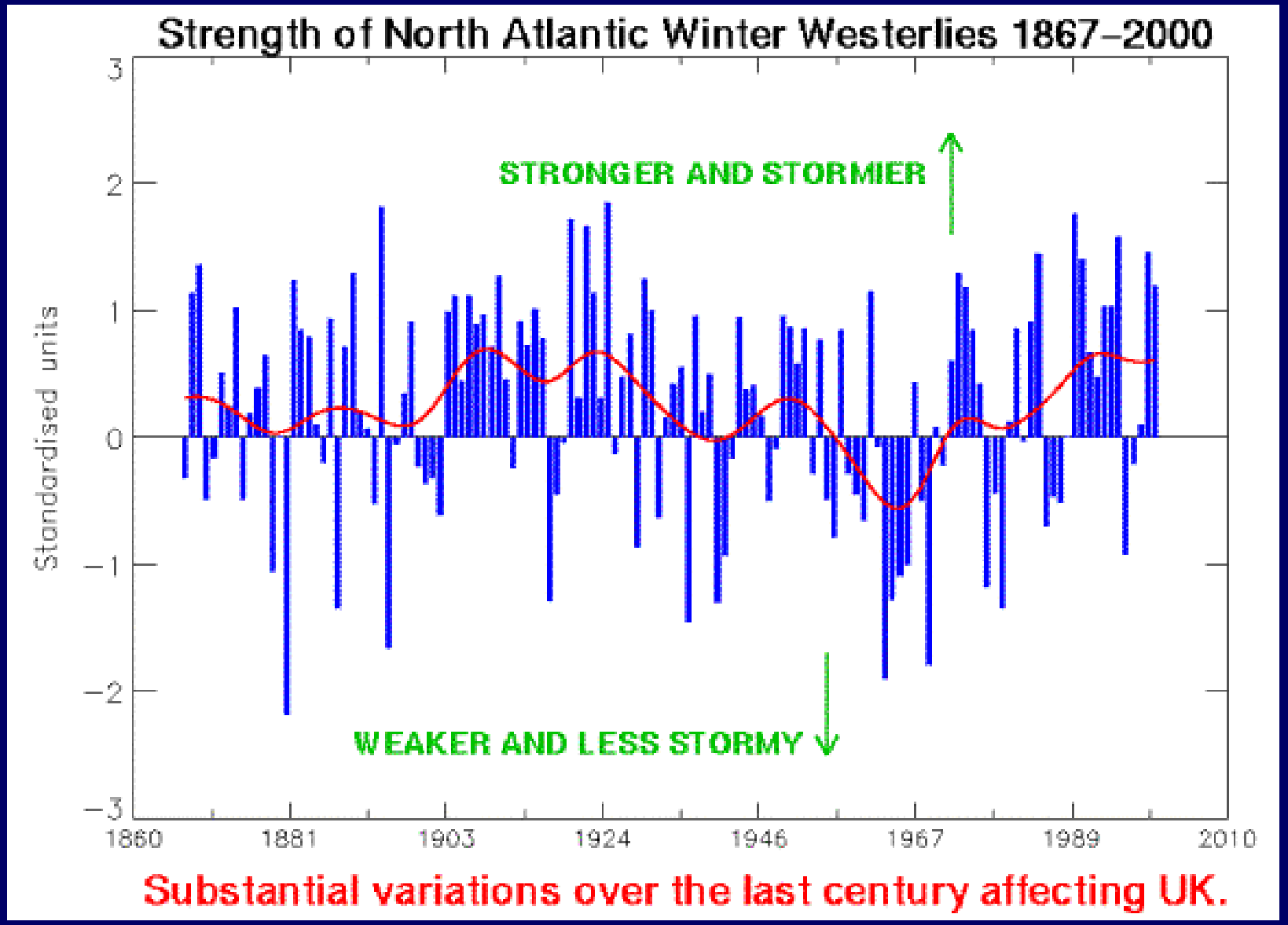
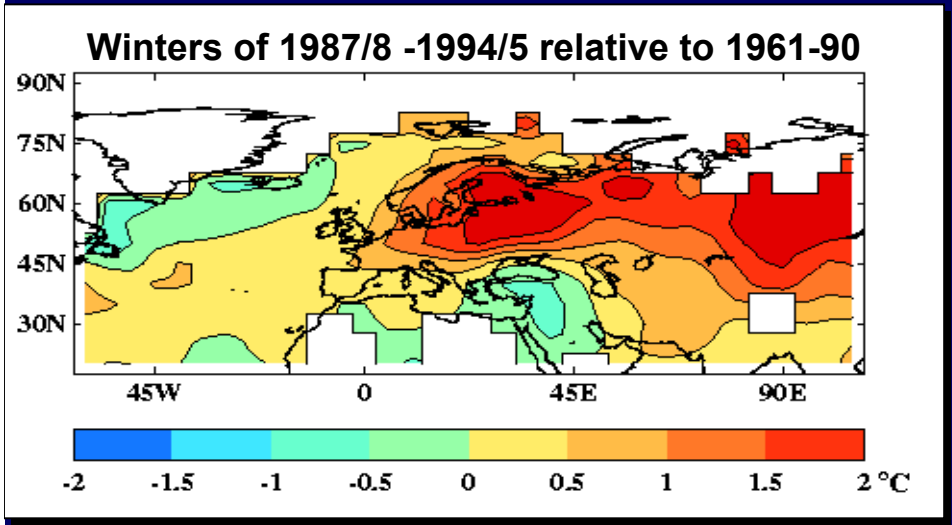
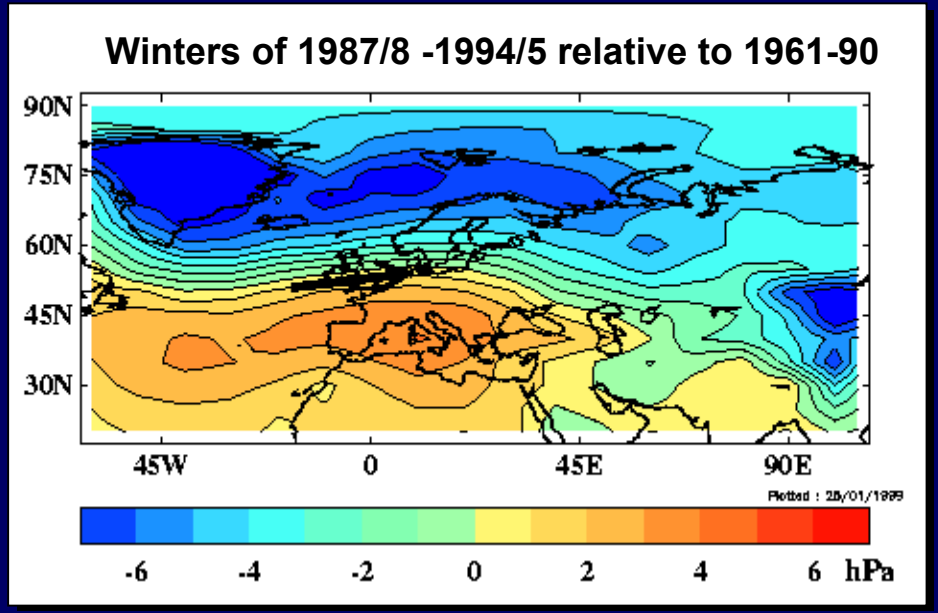

Strength of North Atlantic Winter Westerlies 1867–2000
STRONGER AND STORMIER
WEAKER AND LESS STORMY
Standardised units
3
2
1
0
−1
−2
−3
1860
1881
1903
1924
1946
1967
1989
2010
Substantial variations over the last century affecting UK.

Temperature Difference

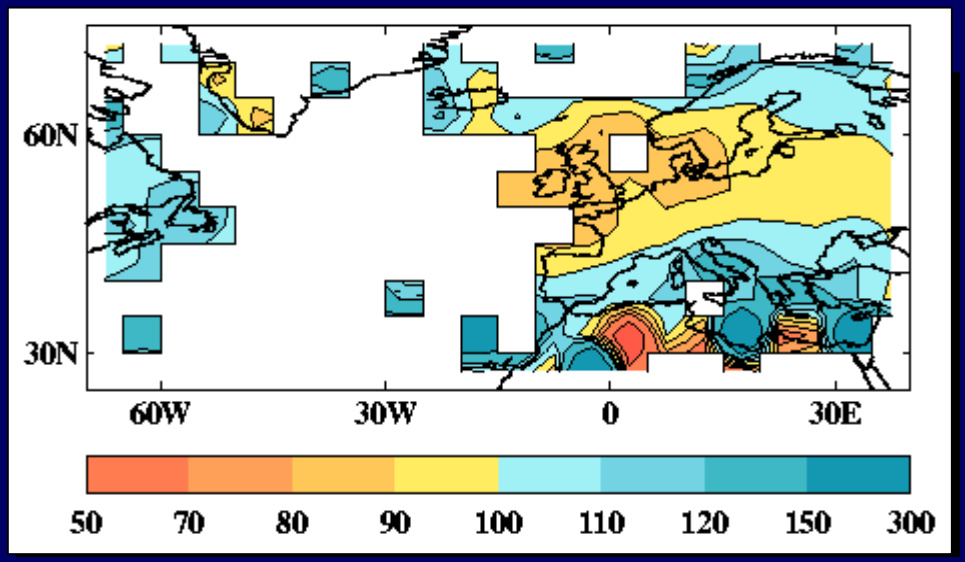


Sea Level Pressure Difference

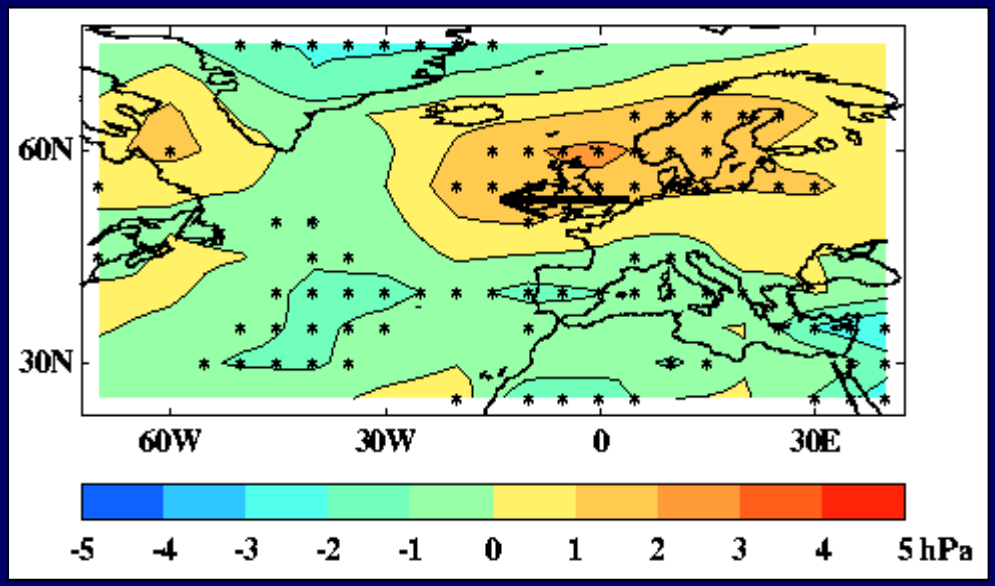


These winters brought more mild westerly winds from the Atlantic over the U.K.

July and August Rainfall 1967-1998 as a Percentage of 1921-1960



Surface Pressure Difference July and August 1967-1998 relative to 1921-1960



Weather over the UK became more settled and drier in high summer in recent decades

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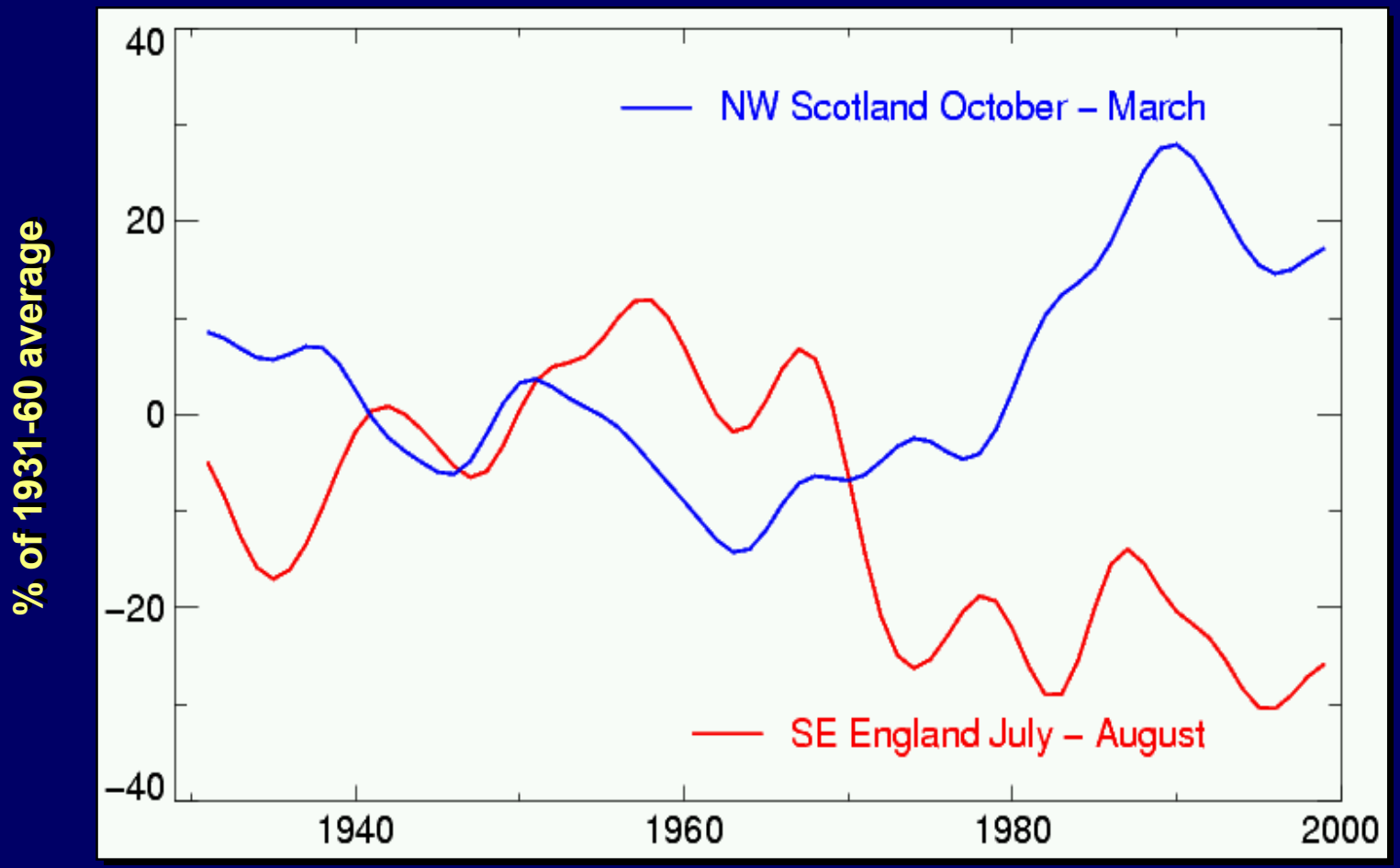
Seasonal Rainfall Changes in the UK



Wetter Scottish Winters & Drier English Summers since the 1960's

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Digitization of ships' logbook data: up to 2 million entries

Interpretation of weather terms (e.g. "brisk", "fresh", "stiff" breeze)

Quality control by duplicate sampling and cross-referencing. Minimise location errors. Avoid duplication of digitisation of Maury data.

Derived statistics

North Atlantic Oscillation

Dissemination of data and results through Web, publications, workshops

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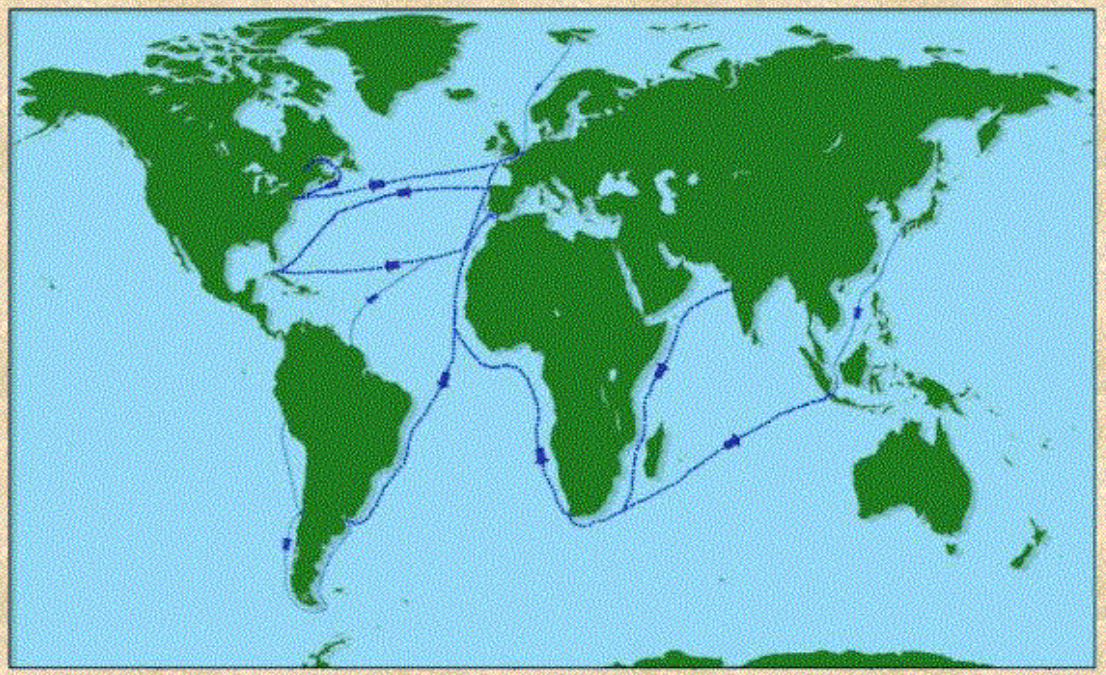
The Routes

This map shows the most important shiping routes over the study period



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CLIWOC: UK Team

- No scanning allowed.
- Digitising 2 observations per day in N Atlantic, S Atlantic, Indian and Pacific *(sparse)* Oceans: could yield 300,000 observations.
- N Atlantic, one observation each from a northern and a southern route.
- Priority to multi-ocean trips. More data in wartime. Includes “social” data. 1750s-1760s done.

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CLIWOC: Netherlands Team

- Digitising 400-600 Dutch East India Company logbooks. Could yield a million observations.
- Images of logbooks --> CDROM
- ~1800-1820 missing owing to Napoleonic wars

CLIWOC: Spanish team

- Images of 400 logbooks from Spain, 120 from France and 120 from Argentina --> CDROM. Could yield > 500,000 observations.
- A few data are for route to Peru.

CLIWOC: outcome

- 20,000 observations per year, 1750-1850, is similar annual total to Maury Collection in 1830s

CLIWOC workshop

- September 2003, Netherlands (CLIWOC ends in November 2003)
- Review project, present climatic and other research which used the logbook data, co-ordinate dissemination of data, consider future activities.

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CLIWOC: conclusion

- **Click on: http://www.ucm.es/info/cliwoc/ for more details or to submit ideas to the project co-ordinator, Ricardo Garcia**

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