



# Developments and innovations in the quality control of hydrometric data in the UK

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UK National River Flow Archive

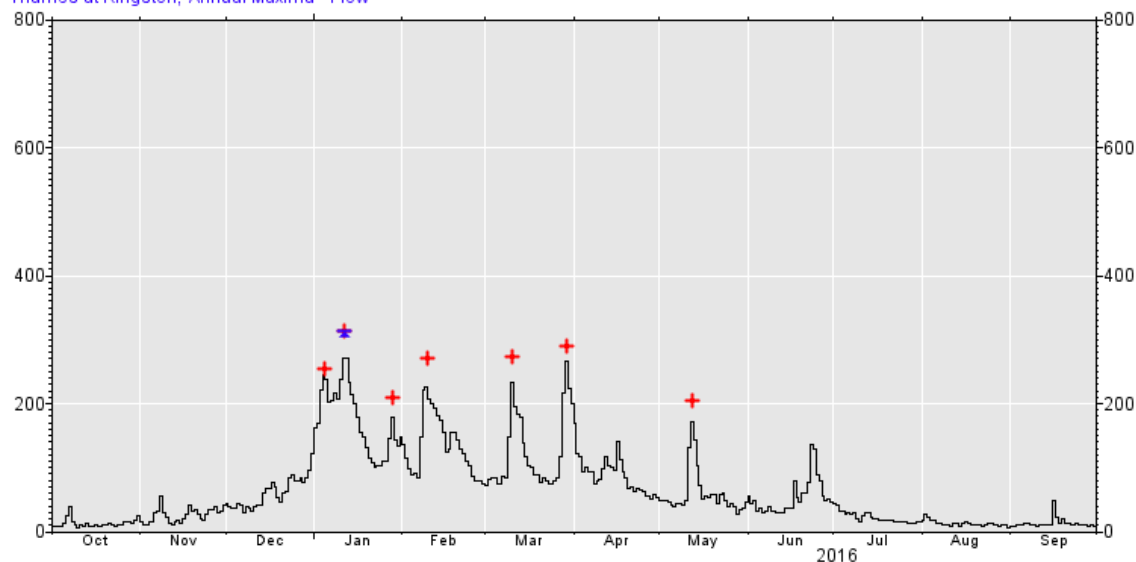
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# National River Flow Archive

- Data are collected by Measuring Authorities, collated by the NRFA
- Annual acquisition and quality control of data
  - Daily mean, **peaks-over-threshold**, **annual maximum**
- Innovations in QC
  - Automated QC
  - Flood Frequency Curves
  - Service Level Agreement



39001 Thames at Kingston, Gauged Daily Flow 39001 Thames at Kingston, Peaks Over Threshold - Flow 39001 Thames at Kingston, Annual Maxima - Flow



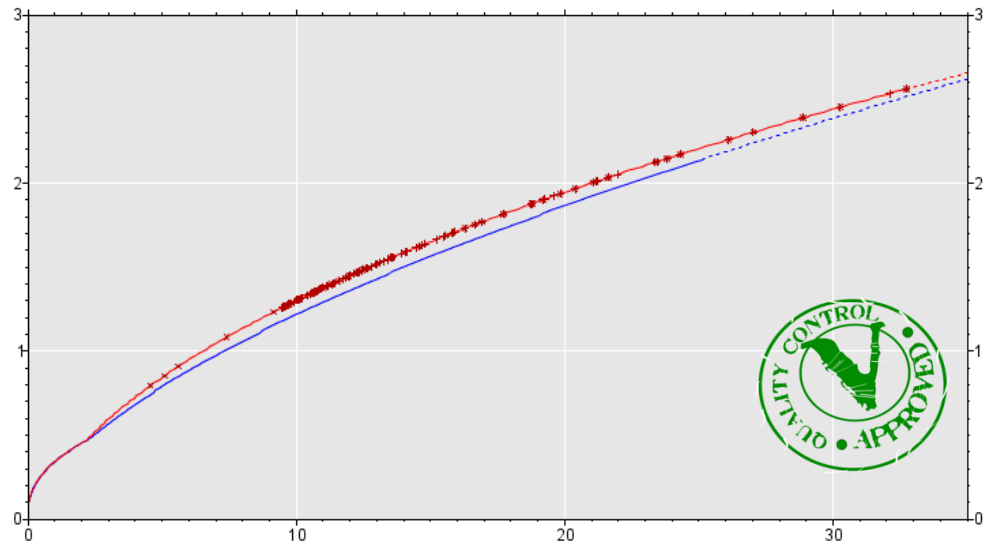
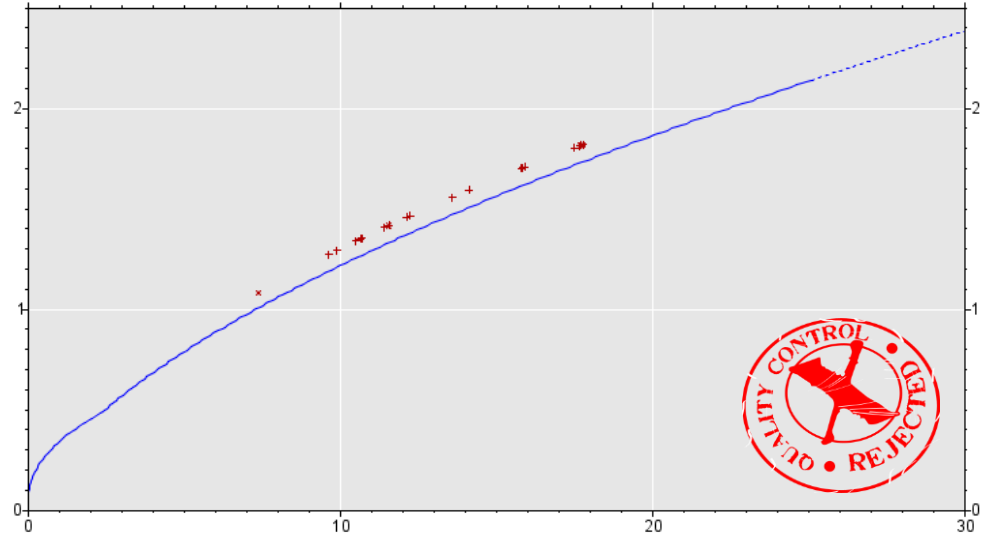
# Automated QC of Peak Flow Data

Seven tests carried out

1. Data Types
2. POT Timing
3. AMAX Timing
4. AMAX = highest POT
5. AMAX stage/flow pair
6. POT stage/flow pair
7. Rating agreement

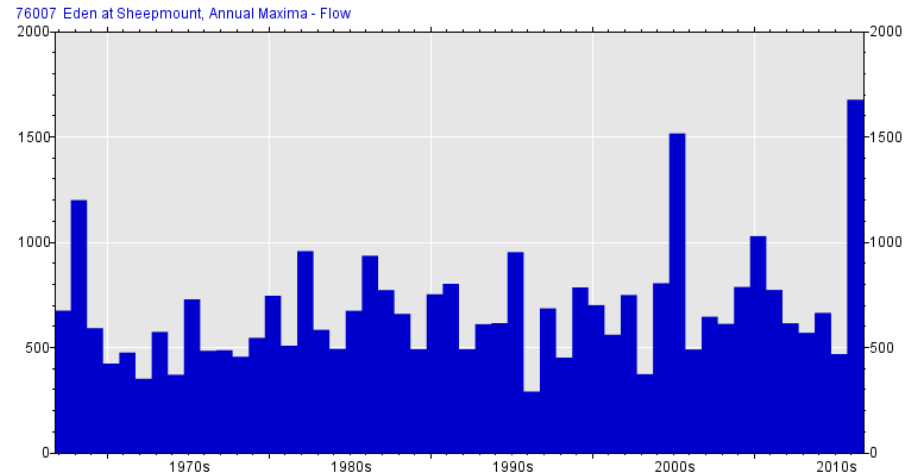
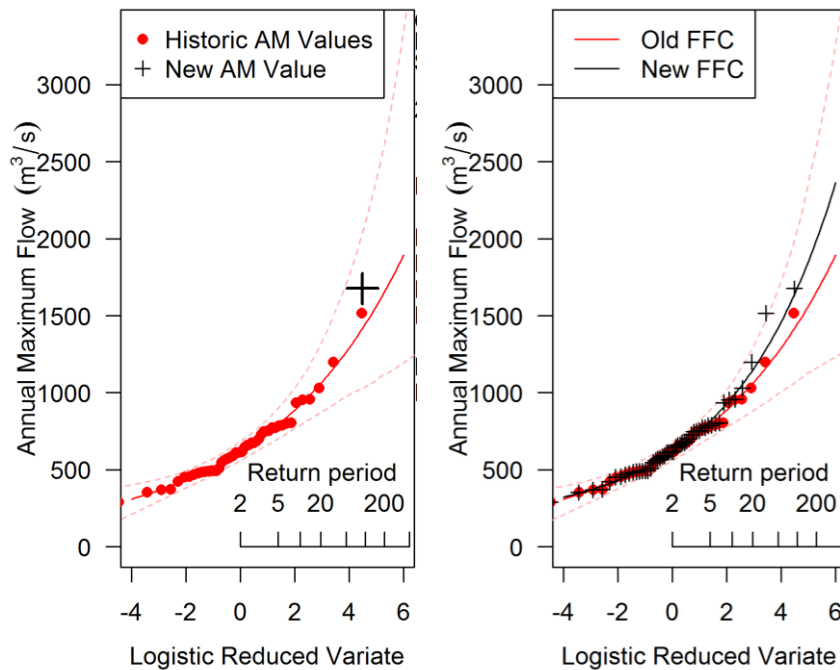
All issues are resolved before manual QC starts

Test 4



# Use of flood frequency curves

- Impact of new AMAX on return period flows
- 15/16 in parts of the UK created significant changes

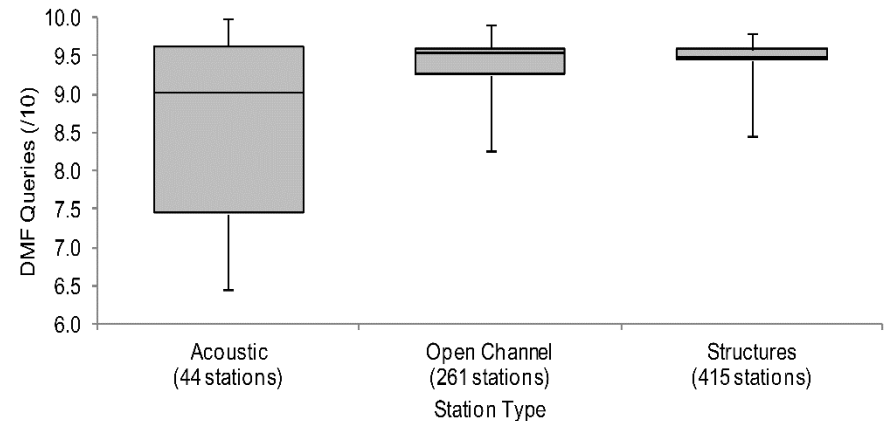
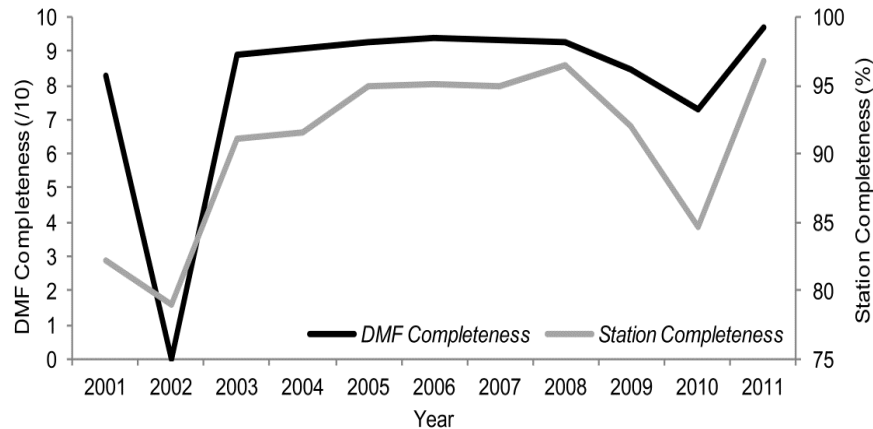


**50-year RP flow: 12% increase**  
**100-year RP flow: 16% increase**



# Service Level Agreement

- Performance indicators used since 2002 to assess timeliness, quality and completeness of daily flow submissions
- Conclusions
  - Missing / erroneous data is generally found in small quantities (~1% of data), but across 4-10% of the network
  - Higher number of valid queries at stations with ultrasonic / acoustic technology (although these are only a small number of stations)



# Conclusions

- NRFA QC procedures are designed to ensure national consistency in hydrometric data
- Use innovative 'risk-based approaches' and automated methods for QC
- Performance indicators assess overall quality and completeness of data submissions



Thank You

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