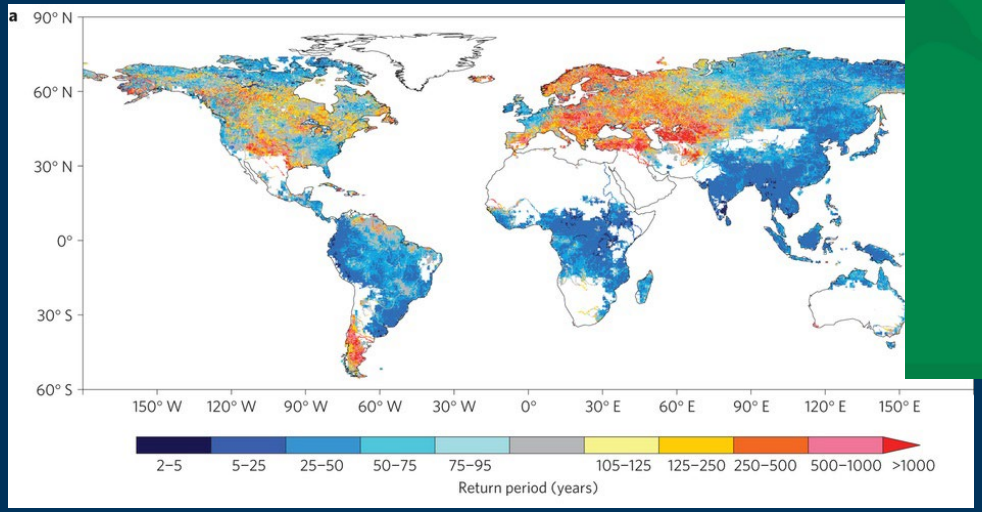
Brunel University London

Do we still need to make space for water? Assessing opportunities and impacts of natural flood management



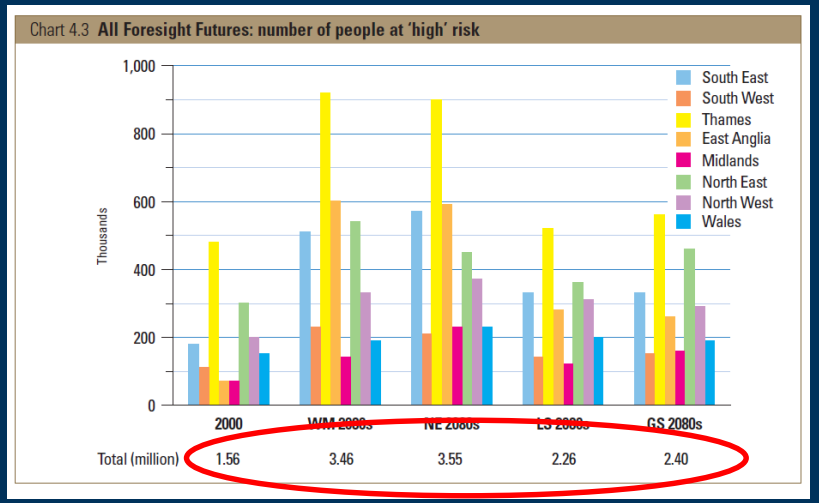
Research and analysis

Flood and coastal erosion risk management areas of research interest

Published 8 May 2024

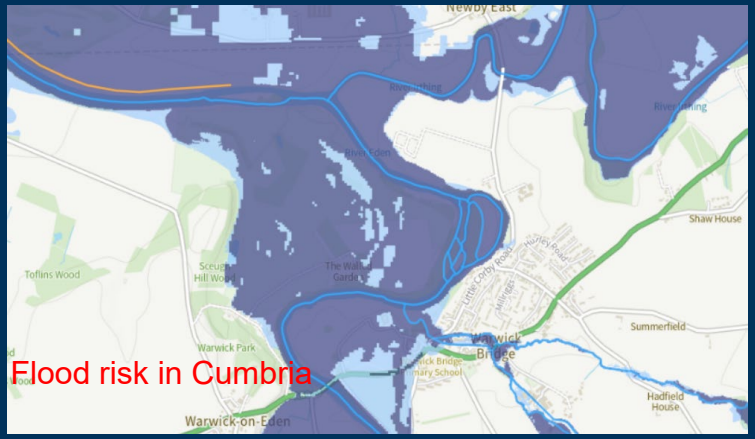
Professor Trevor Hoey

Professor of River Science; Director of the Centre for Flood Risk and Resilience



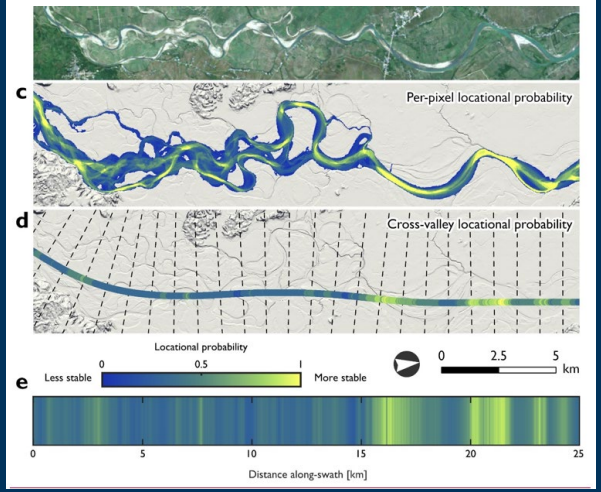
- For all emissions scenarios, exposure to flood risk will continue to rise, and:
  - risk varies significantly across the UK
  - “There is…inequality in terms of social deprivation and flood risk exposure from all sources of flooding” (EA, 2021)

- Confining rivers does not (usually) work
  - Not cost-effective
  - Negative impacts on biodiversity, pollution, health…
  - Maintenance, repair, replacement costs

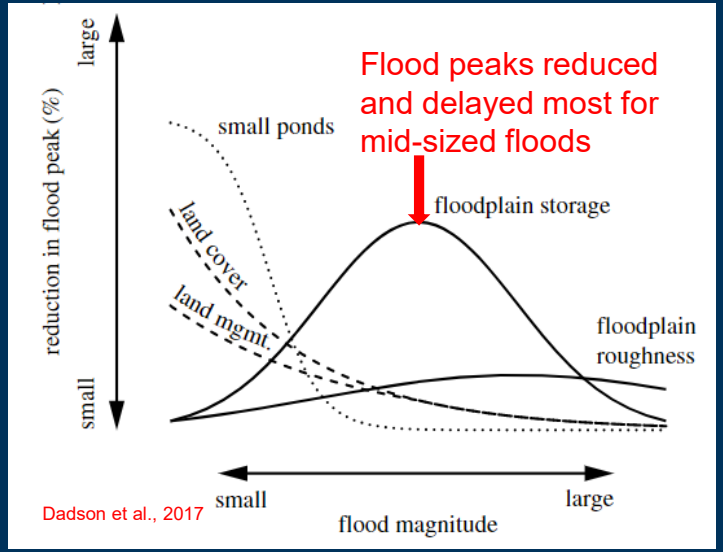


Flood risk in Cumbria

Satellite mapping of river change in Philippines



- River floodplains are dynamic, *even in the UK*
- Rivers vary naturally – local restoration does work
- Natural Flood Management comes in many flavours:
  - ‘make space for water’; species reintroduction; afforestation; SuDS; blocking upland drains; leaky dams etc.
  - thousands of schemes across the UK; increasingly used globally (China, Philippines, NZ….)
  - Often needs time for adjustment
  - Positive impacts on biodiversity, pollution, health…
  - Reduces maintenance, repair, replacement costs



- NFM does work – an *important contribution* NOT a single-point solution
  - Reduces non-extreme flooding
  - Improves habitat
  - Delivers other (economic, recreational) benefits

- Recommendations
  - Use space on the historical floodplain – do we really understand the functional floodplain extent?
  - Reduce river confinement – needs integrated planning and management

  - Future-proof against climate change
  - Consider all costs, economic and social benefits