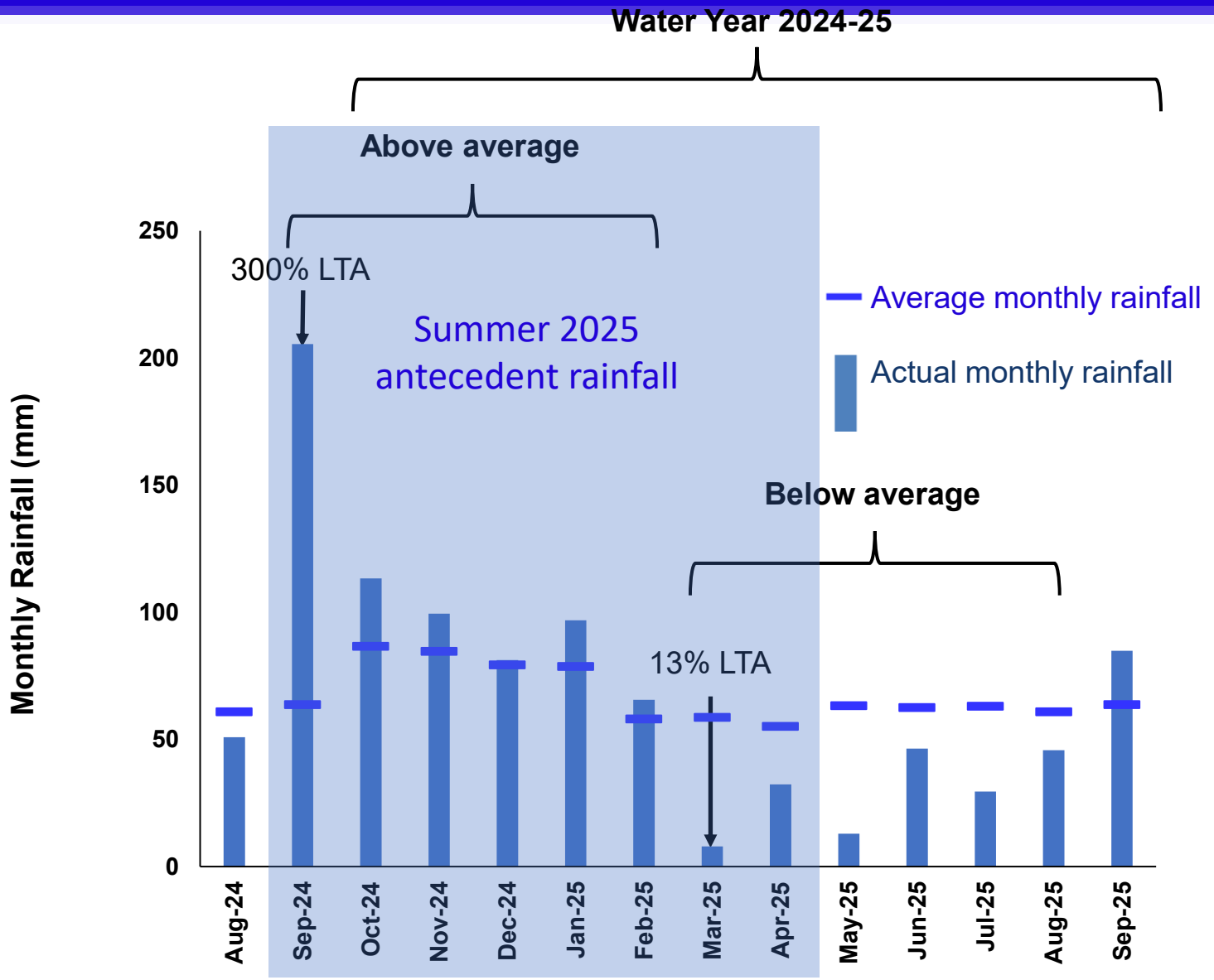
Cirencester & Churn Waterways & Environment Partnership

Weather & water in the Churn catchment: 2025 in context

Friends of the Gumstool Brook

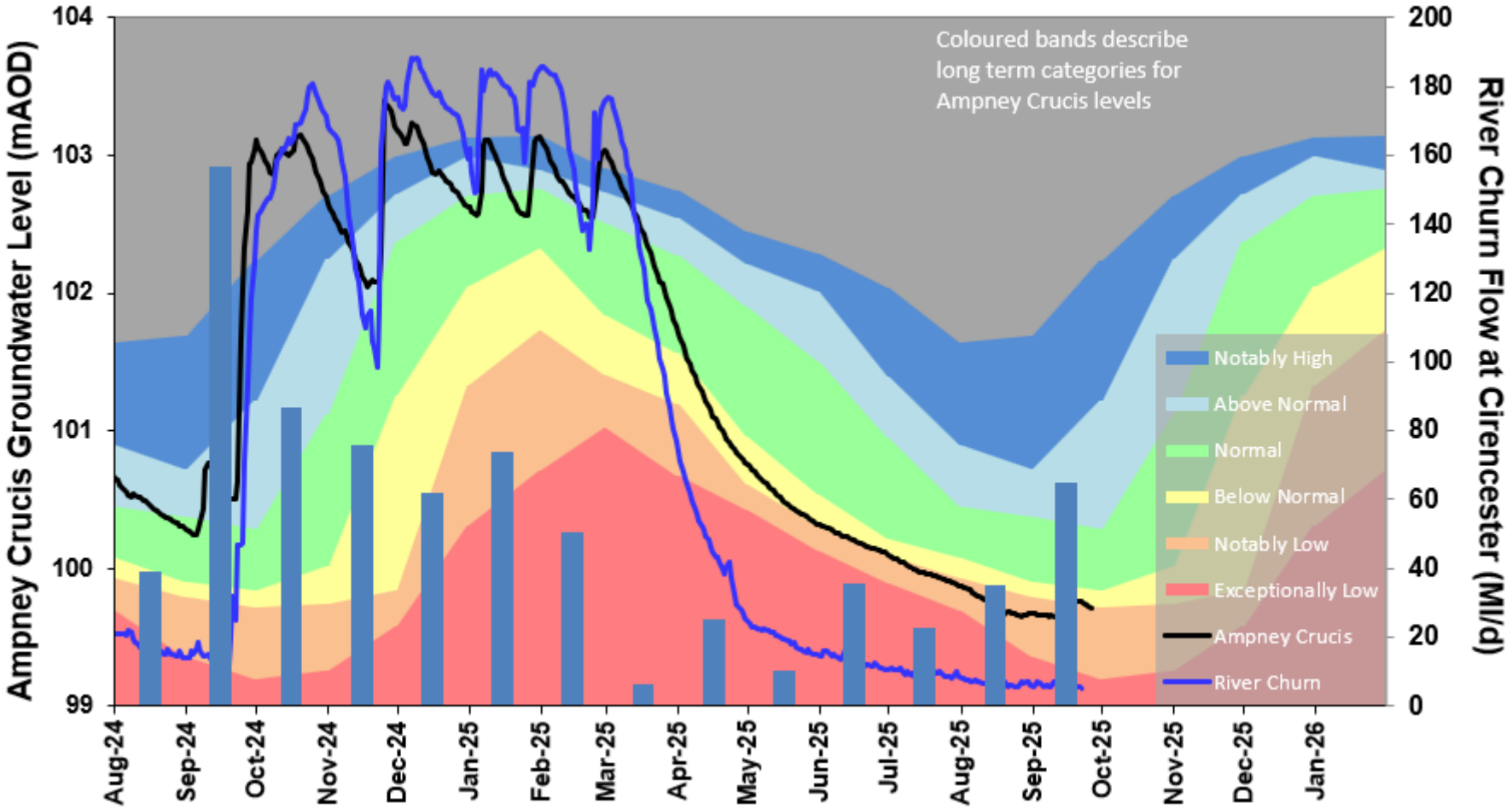
CCWEP Inaugural Meeting
RAU, Cirencester
1st October 2025

Rainfall in the Churn catchment



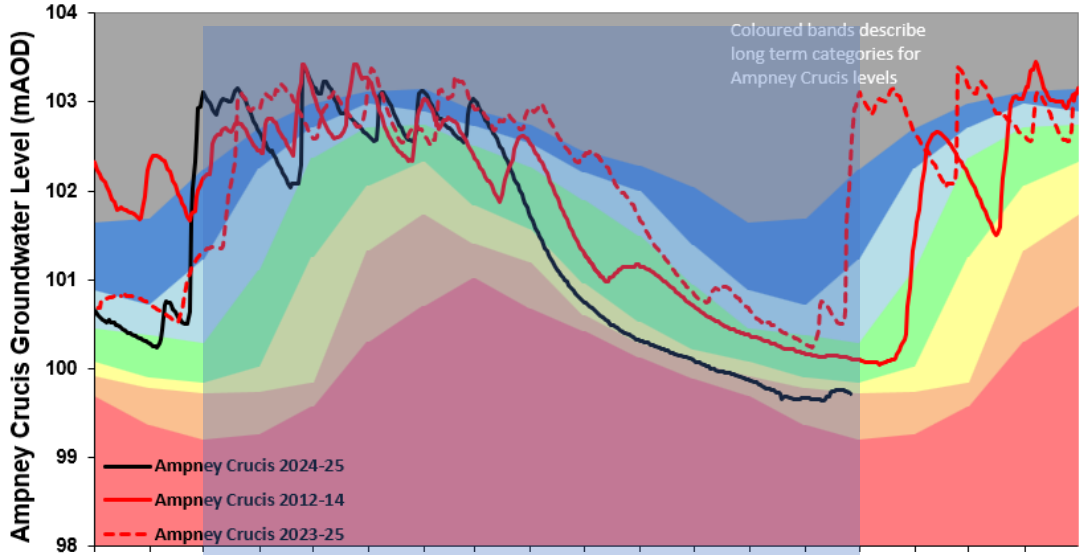
- Churn average annual rainfall ~900 mm
- Churn 2024 actual rainfall = 1300 to 1400 mm wettest calendar year on record
- "Water year": 1st October to 30th September
  - Cooler weather
  - Plant growth slows
  - Soils become wetter
  - Water environment starts to recover
- With wettest water year ranked 1st, 2024-25 was 35th in the 44 year record
- Autumn-Winter-Spring rainfall is important for the water environment in Summer

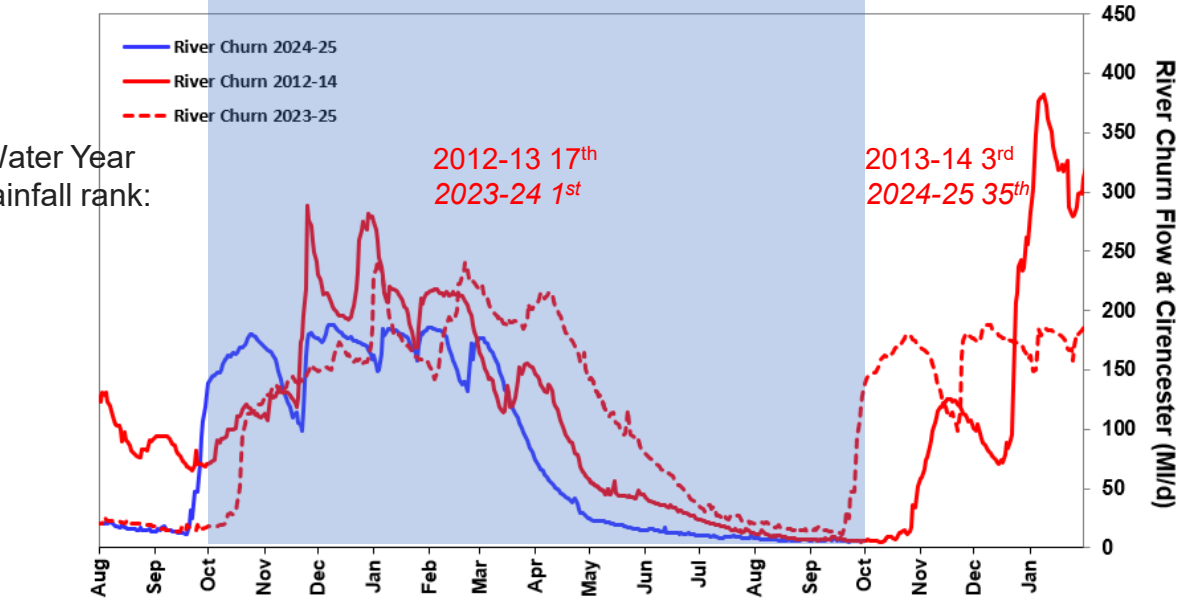
Groundwater & River Churn response



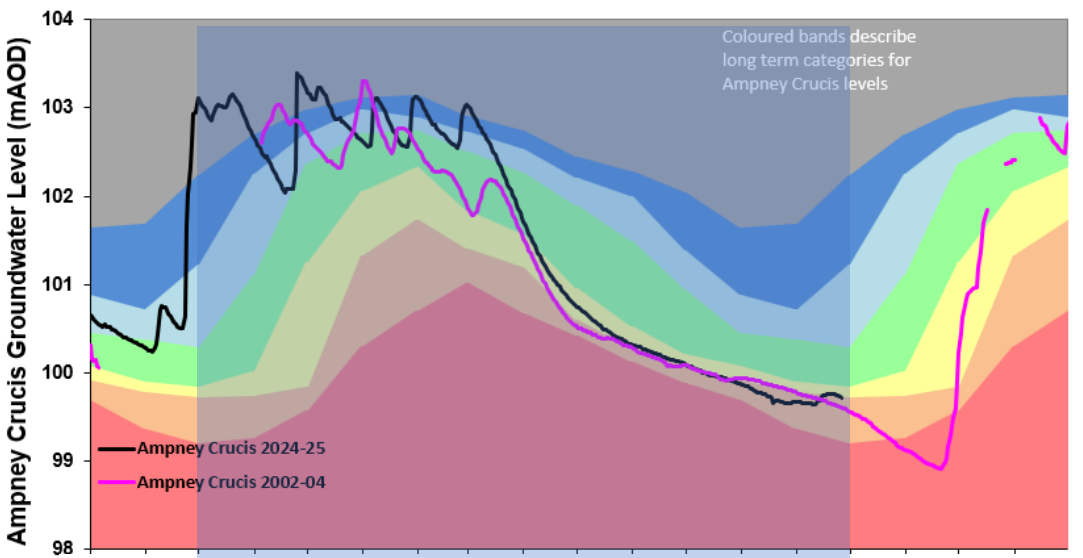
- Rapid groundwater rise to exceptionally high levels in September 2024
- Autumn/Winter fluctuations directly linked to rainfall
- Below average Spring rainfall caused fall from exceptionally high to notably low levels
- Wet September 2025 but soils still not sufficiently wet to allow significant aquifer recharge
- Pattern of River Churn flow is very similar; groundwater flow out of aquifers drives river flow

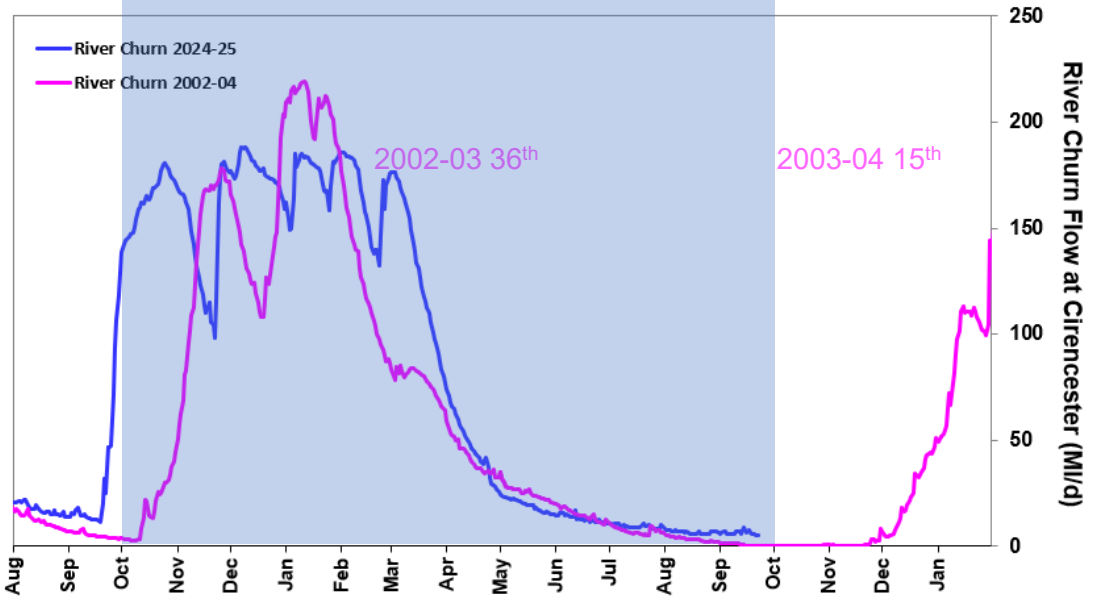
Wetter & drier: 2025 in context





Water Year rainfall rank:





Water environment: Hazards & mitigation

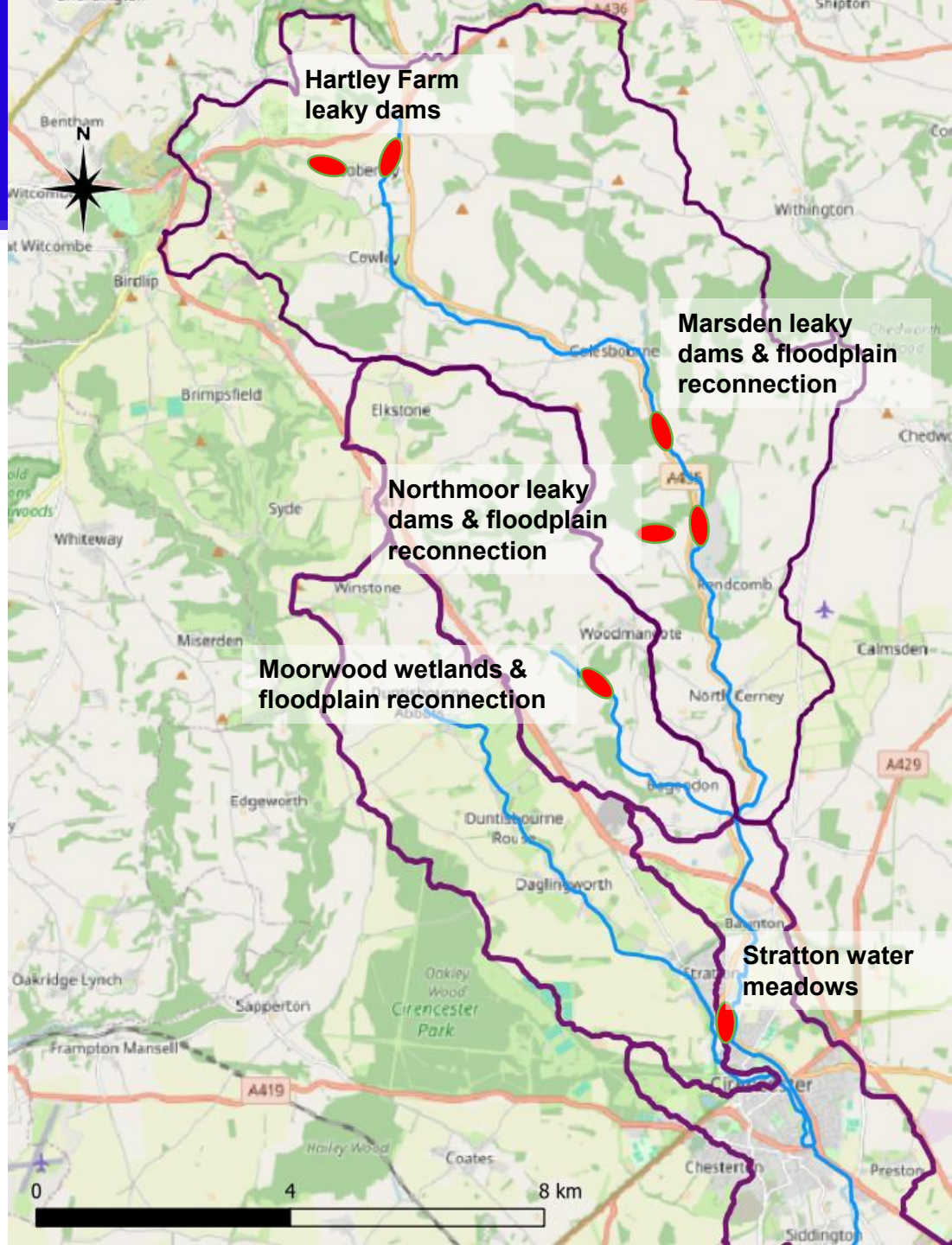
- Hazards of low river flow, drought and flood are well known in the Churn catchment
- Unsurprisingly, floods in Cirencester tend to occur during wet weather, but controls are complex:
  - No winter floods in 2023-24, the wettest water year
  - Significant flooding in 2020 with flow >300 Ml/d
  - Distribution of rainfall throughout the year
  - Exceptionally high groundwater levels & high intensity rainfall increase impact
- Low flows in late summer are normal:
  - Flows >30 Ml/d are rare & <15 Ml/d is very common
  - Current exceptionally low flow is ~5 Ml/d, but occurs ~1 in 5 years
- Low & exceptionally low summer flows can occur in relatively wet water years and when antecedent autumn-winter rainfall is above average
- Natural water storage in the catchment is low, resulting in rapid response to wet and dry weather

Churn NFM project

- “Thames Source Natural Flood Management (NFM) - Re-naturalising the Churn” aims to help mitigate flood risk

Lead Team:	**Partners:**
GCC	Cirencester Town Council
FWAG	CCDT
FoGB	RAU

- Collection of nature-based solutions (NBS) to slow river flow, increase water storage & enhance biodiversity
- Community engagement & citizen monitoring of benefits
- Wider NBS benefits include:
  - Increase water storage & slow release to support low flows
  - Improve aquatic habitats that experience low flows



Thank you. Any questions?

- If you are interested in joining the Friends of the Gumstool Brook, you can contact us on FriendsOfGumstoolBrook@gmail.com

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