

STORM DENNIS FEBRUARY 2020 : THE HYDROGRAPH RESPONSE

ANTECEDENT RAINFALL

- The ground was already saturated by previous wet weather especially storm Ciara
- Rainfall intensity exceeded the infiltration capacity
- This led to less infiltration and more overland flow

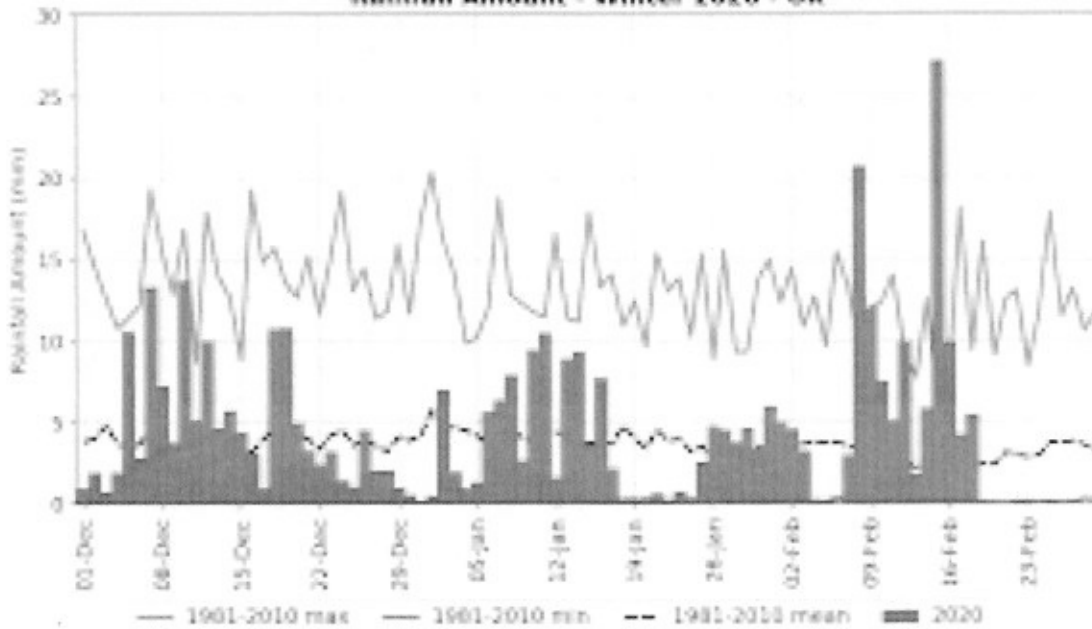
PHYSICAL FACTORS

- Winter season gave less evapotranspiration
- Upper basins are steep
- Upper Wye basin has little woodland, little interception or interception loss

Met Office

Source: HadUK-Grid 19/02/2020 14:05

Rainfall Amount - Winter 2020 - UK



a. RIVERS USK AND TAFF

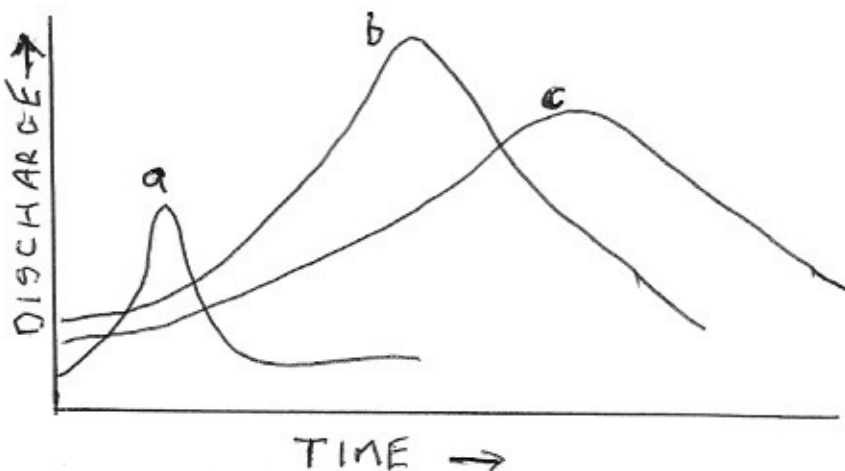
- Small basins
- Steep slopes / narrow valleys
- Rapid response to rainfall

b. RIVER WYE

- Larger basin
- Gentler gradients
- Deeper soils (more infiltration)
- Larger flood plain
- Longer response time

c. RIVER SEVERN

- Largest basin
- Longest river
- Flatter, larger flood plain
- Longest response time, long lag time



HYDROGRAPH VARIATIONS

- lag times
- heights of peak stormflows
- steepness of rising limbs
- steepness of recession limbs
- areas under line