AS Geography 1.2 Fluvial Environments *Student Notes*

The characteristics of river regimes and the physical and human factors influencing them.

You need to be familiar with the contrasting discharge patterns (regimes) for two contrasting rivers from different climatic regions.

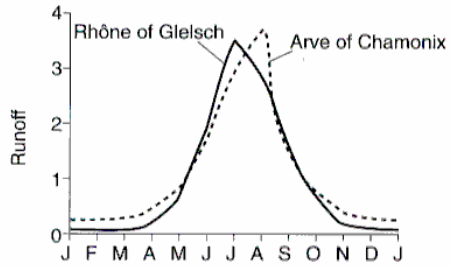
- **Discharge** is the rate of flow of a river at a particular location at a particular moment in time. It is measured in cumecs (cubic metres per second or m^3/s) by multiplying the cross sectional area (in m^2) by the velocity (in m/s)

- **A River Regime** is the changing pattern of river discharge over a period of time, usually a year. Either mean daily or mean monthly discharge figures are used.

The River Regimes below are "simple regimes" with a single period of high discharge and a single period of low discharge. Use an atlas to locate the rivers and to find out more about their climates

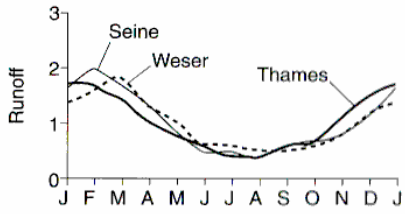
Glacier melt

- European mountain rivers have a high-water period (July-August) when glaciers feeding them melt most rapidly.



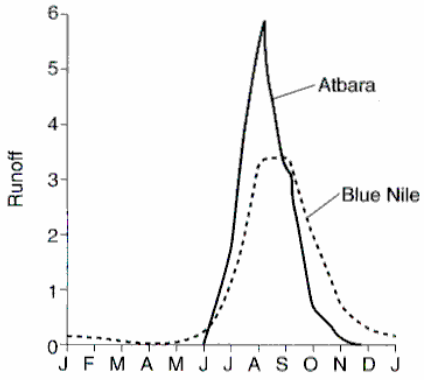
Oceanic rainfall/evapotranspiration

- In many oceanic areas of Europe, rainfall is evenly distributed but high evapotranspiration in summer leads to low runoff.



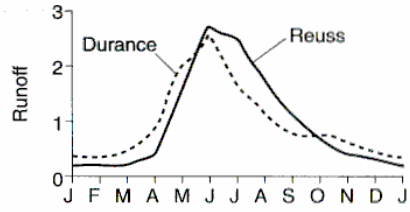
Tropical seasonal rainfall (monsoonal)

- In tropical areas, evapotranspiration tends to be stable (high) but summer rains cause a peak.



Snowmelt

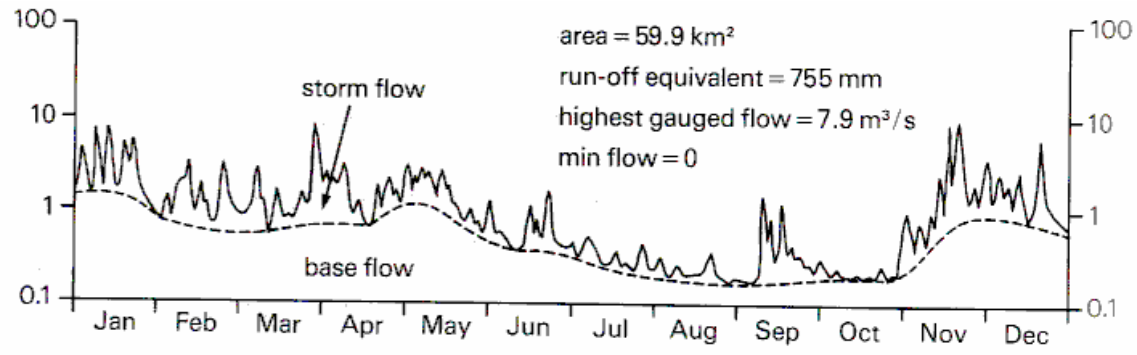
- Melting of snow cover either in mountainous areas during early summer or over the Great Plains of North America in early/late spring.



Seasonal patterns can be clearly seen. These may be explained by:

- **Seasonal patterns of rainfall** with higher in the winter months.
- Spring **snowmelt** or **glacial meltwater** in mountainous areas.
- Higher levels of **interception** and **evapotranspiration** in the summer months.
- The degree of **saturation of soils** resulting from previous rainfall events balanced against evapotranspiration rates. Saturation will reduce infiltration and percolation rates and increase surface runoff.
- The rates of **human abstraction** of river water, which can increase in summer months in line with increased demand.
- The rates of **water storage** in reservoirs to meet future demands.

The graph below shows the Regime of the River Coquet, in North East England.



Find the River Coquet in an atlas.

Suggest reasons for the pattern of its flow regime. (Consider rainfall patterns, evapotranspiration rates, antecedent conditions and human activity.)