

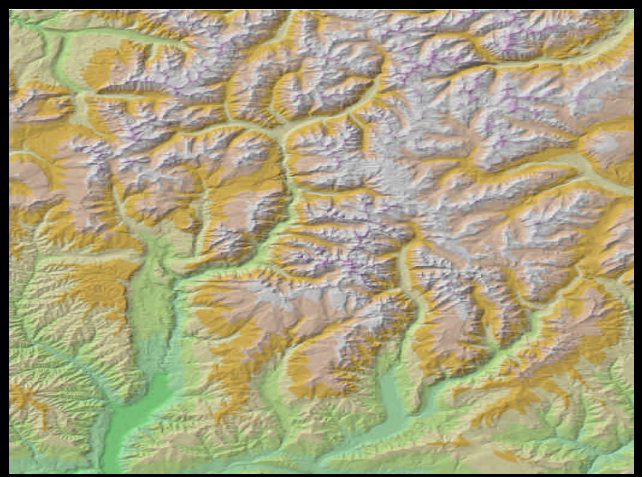
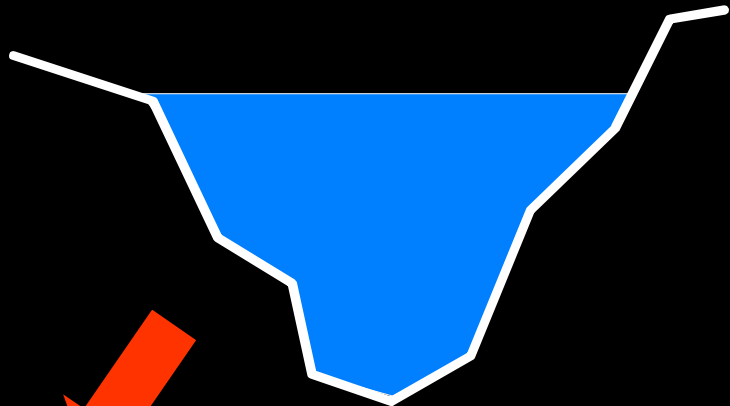
**How did they
develop that map?**

1. Estimate regulatory discharge ($p=0.01$)

2. Compute corresponding water elevation in channel and floodplain

3. Map inundated area

Hydraulics model

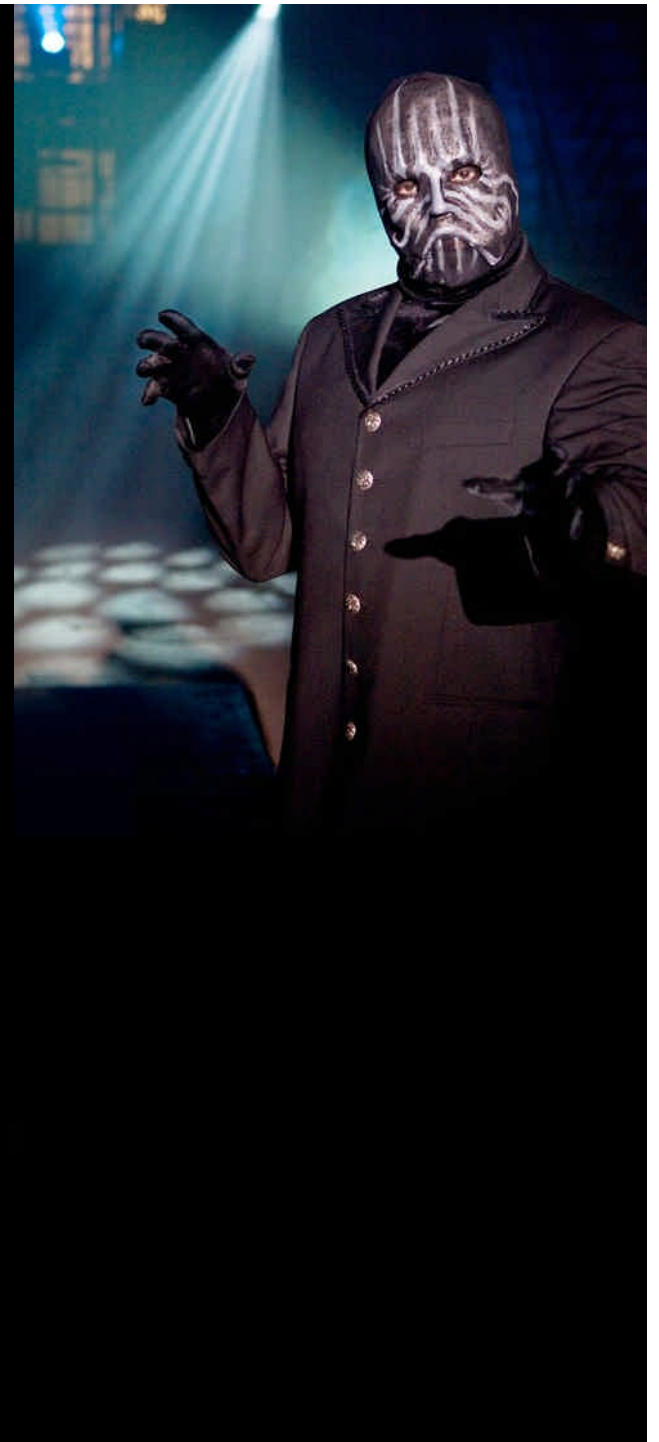


Terrain data

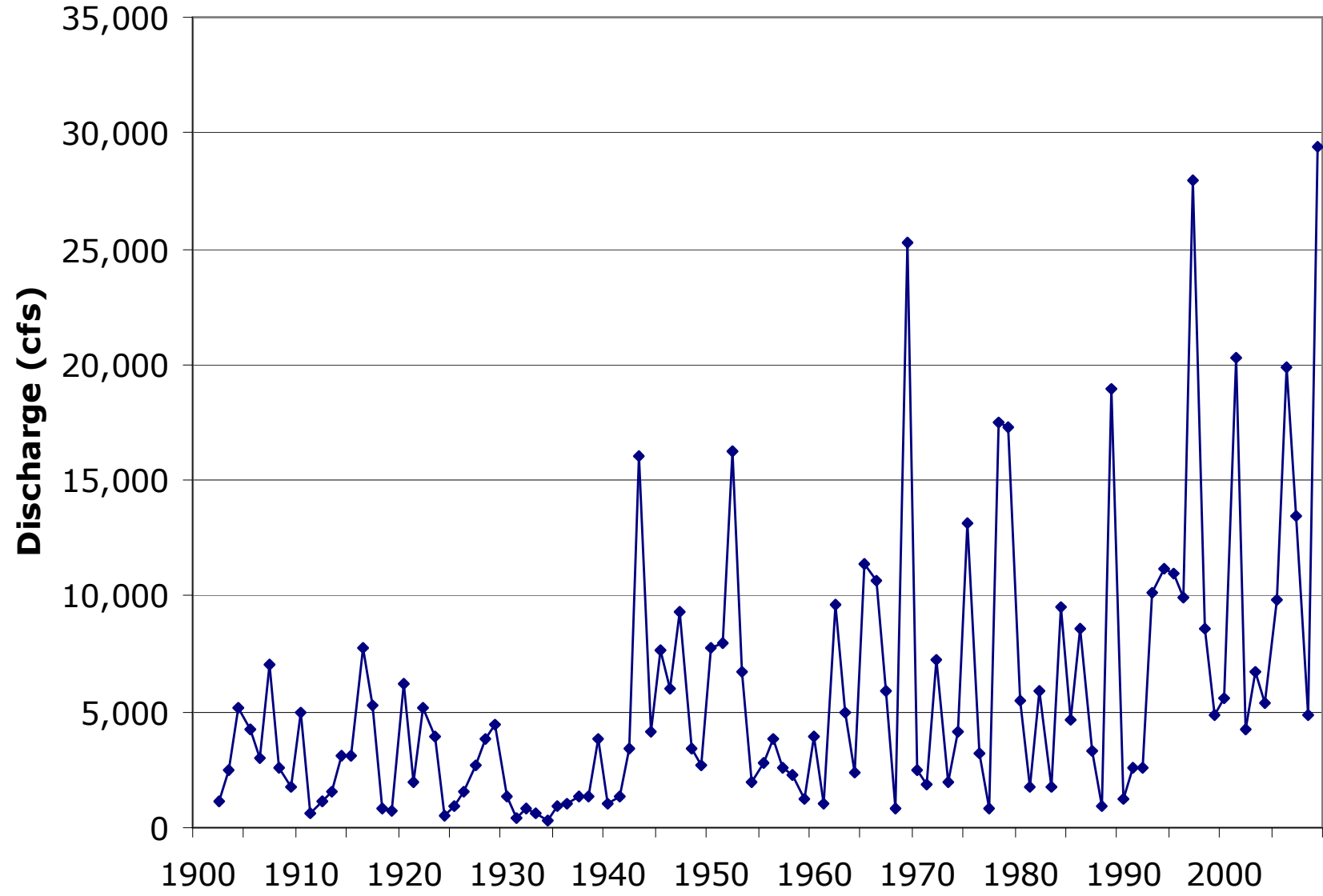


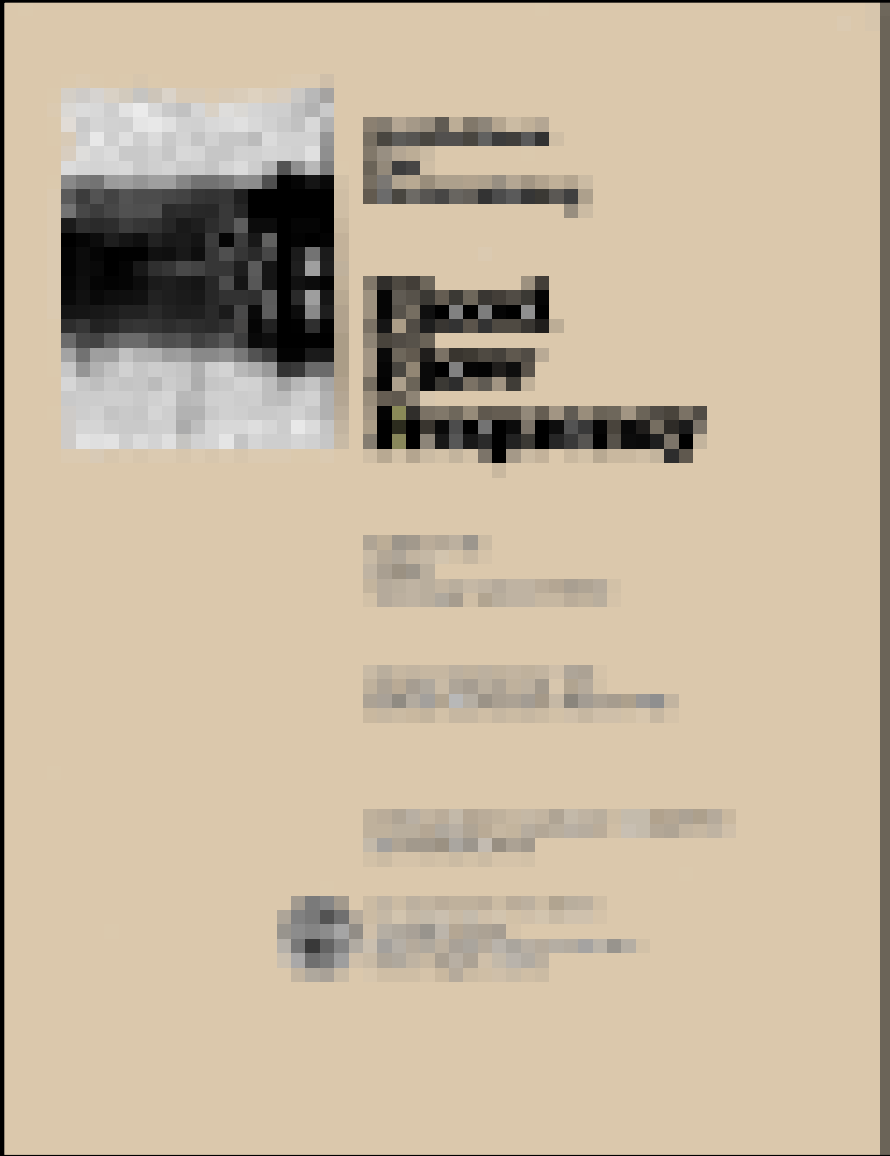
GIS tools

MAGNUS HIGHEST SECRETS FRANKLY DIFFICILE

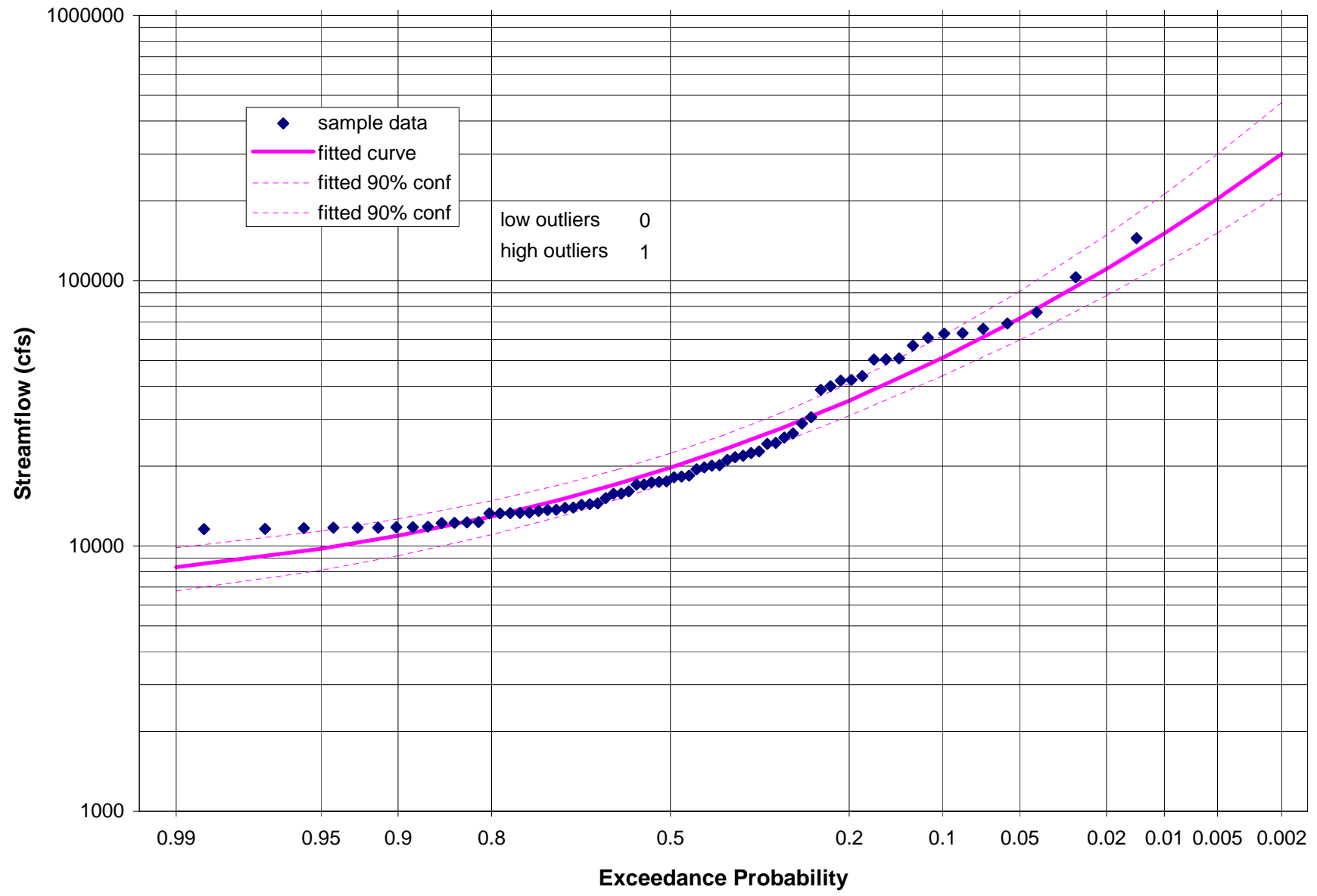


**Infer from
historical record**





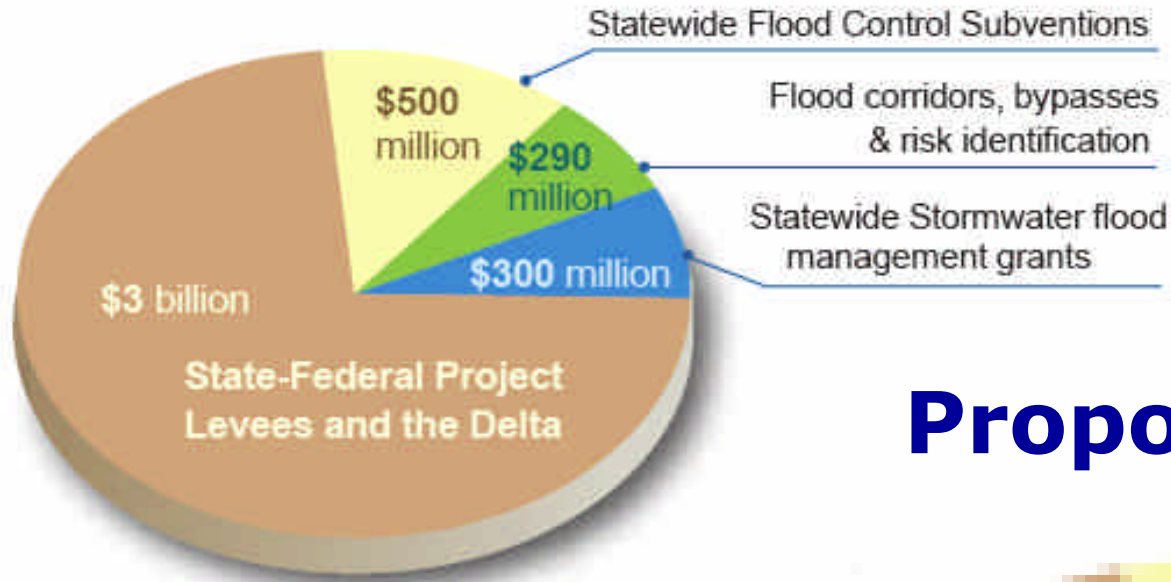
- **Reliable representative sample of random homogeneous events**
- **Pearson type III distribution fitted in log space**



California frequency update

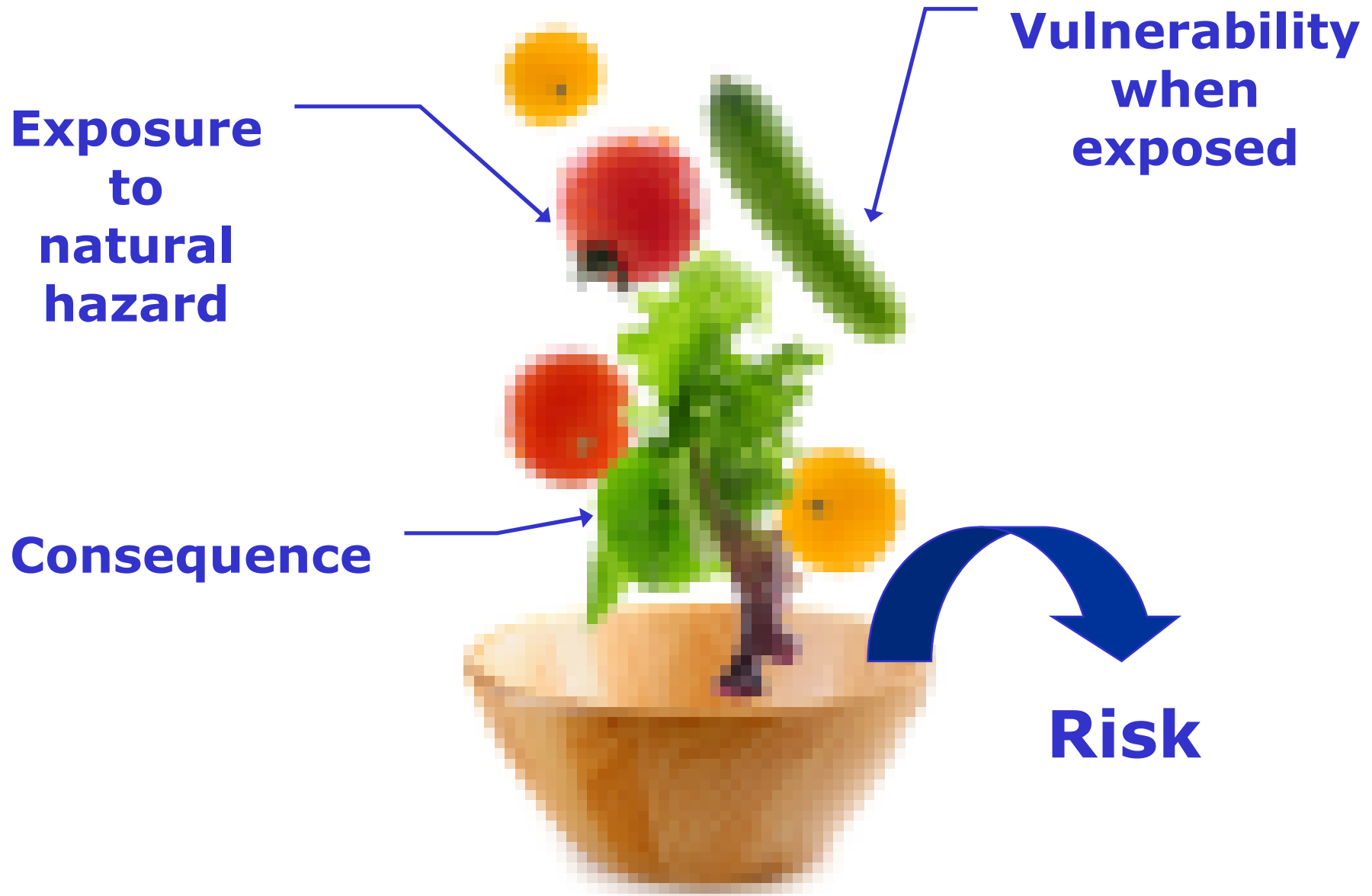


Proposition 1E



Proposition 84





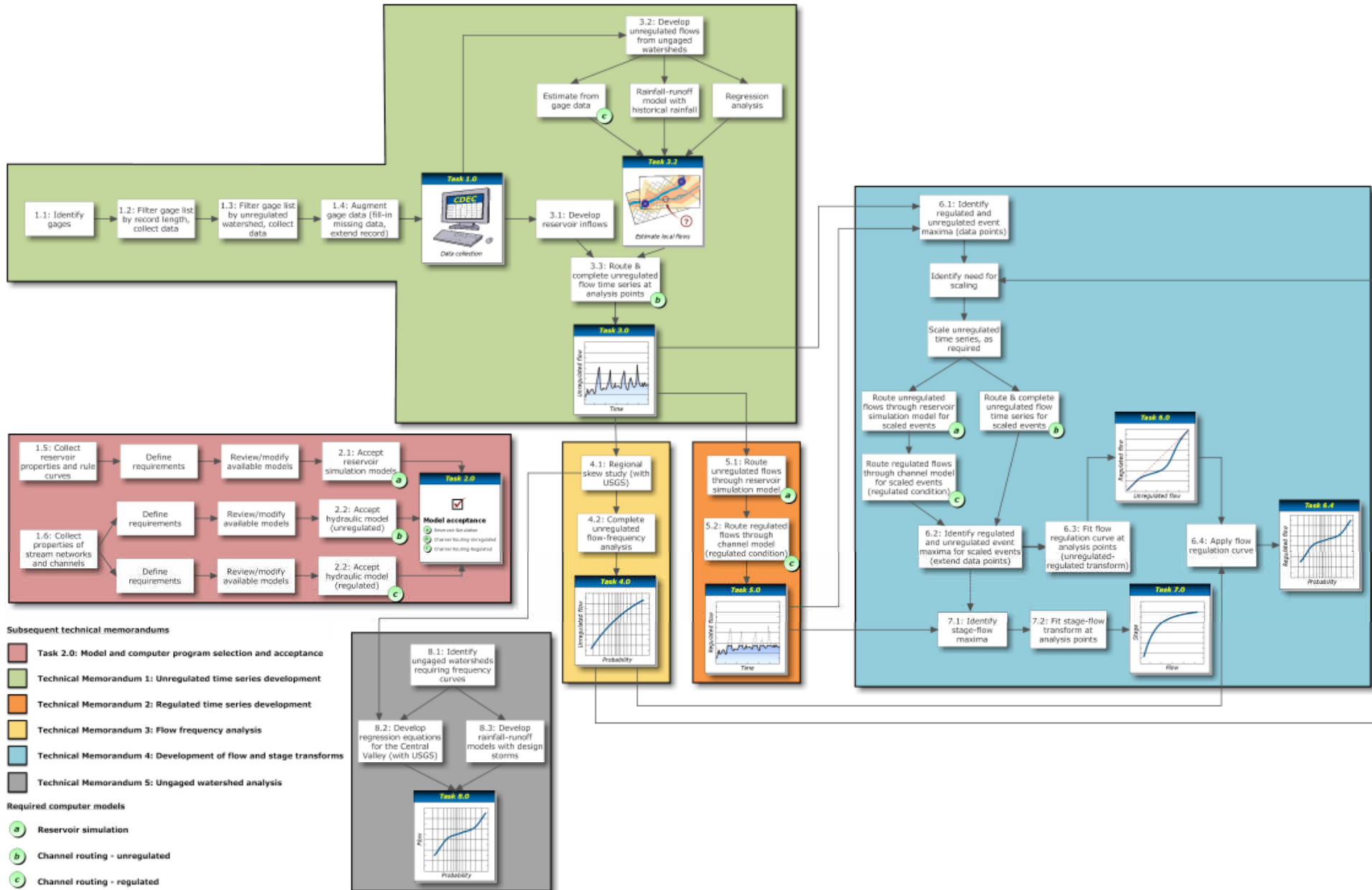


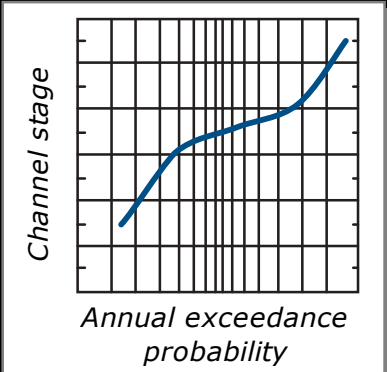
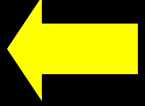
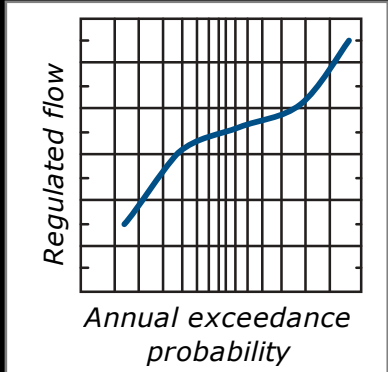
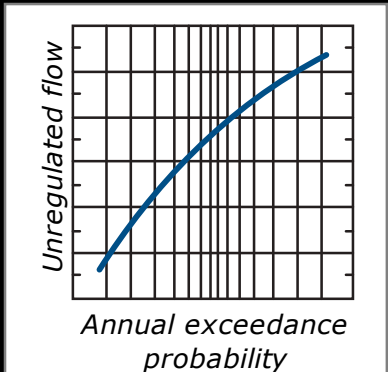
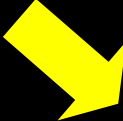
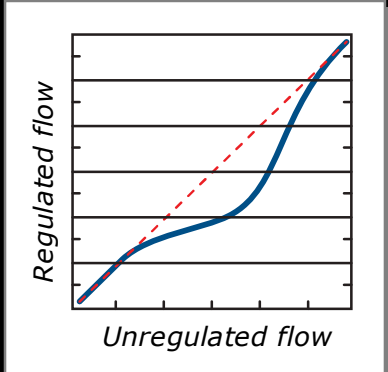
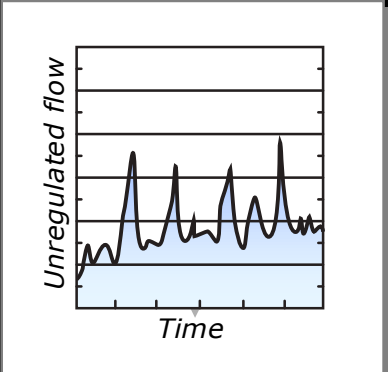
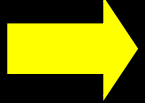
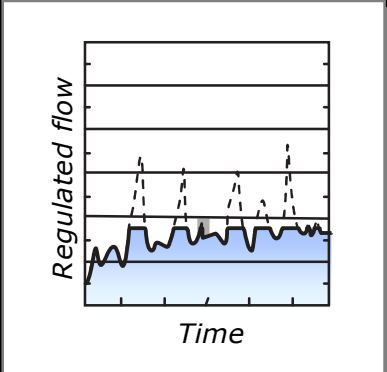
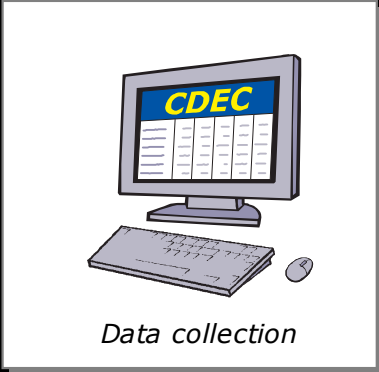
Sacramento River

- **At Rio Vista = 27,000 sq mi**
- **37 reservoirs**

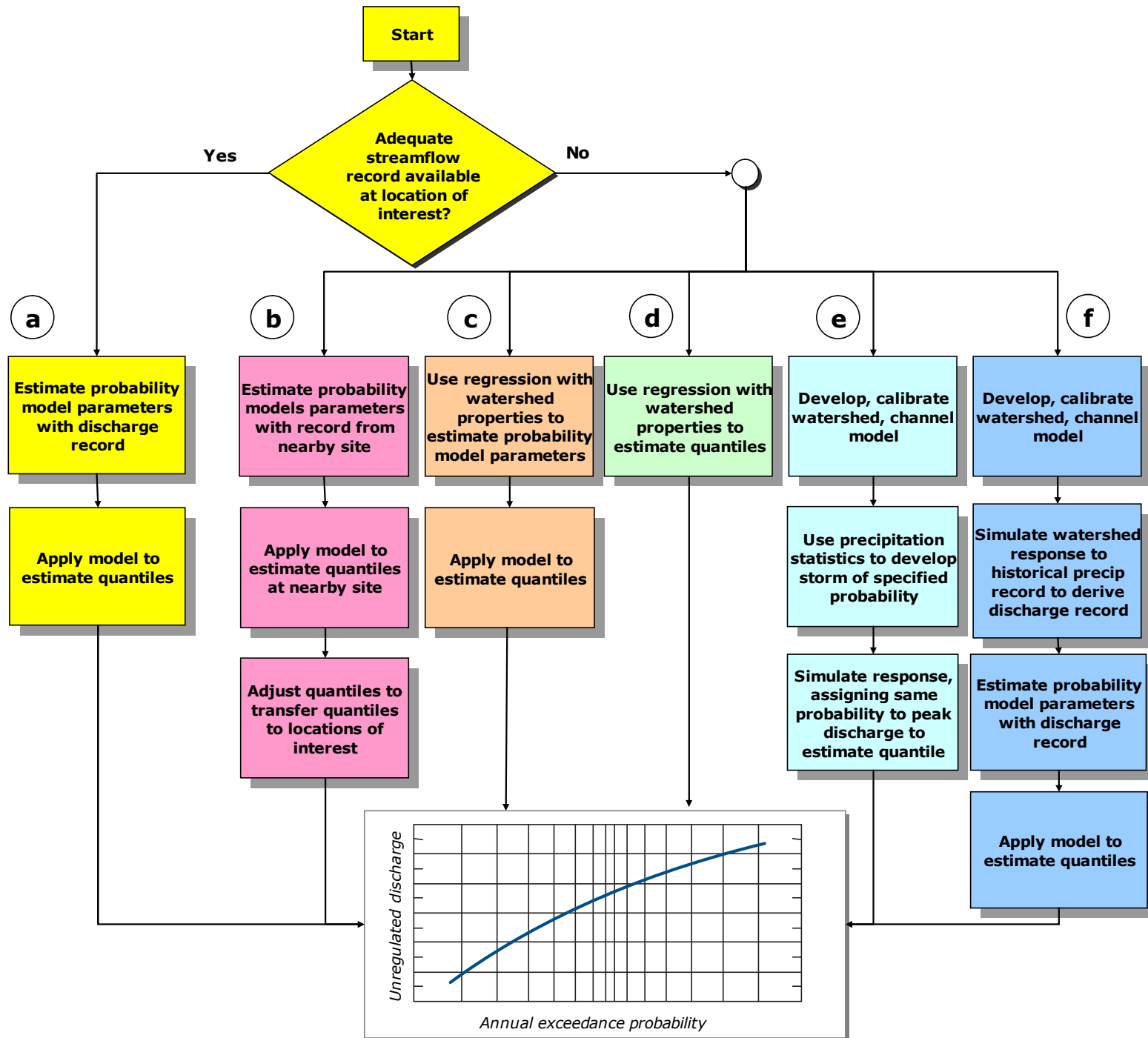
San Joaquin River

- **At Mokelumne River = 20,000 sq mi**
- **36 reservoirs**





**Infer from
historical record
...but what if flow
data are not
available?**



**Infer from
historical record
...but what if series
is not stationary?**

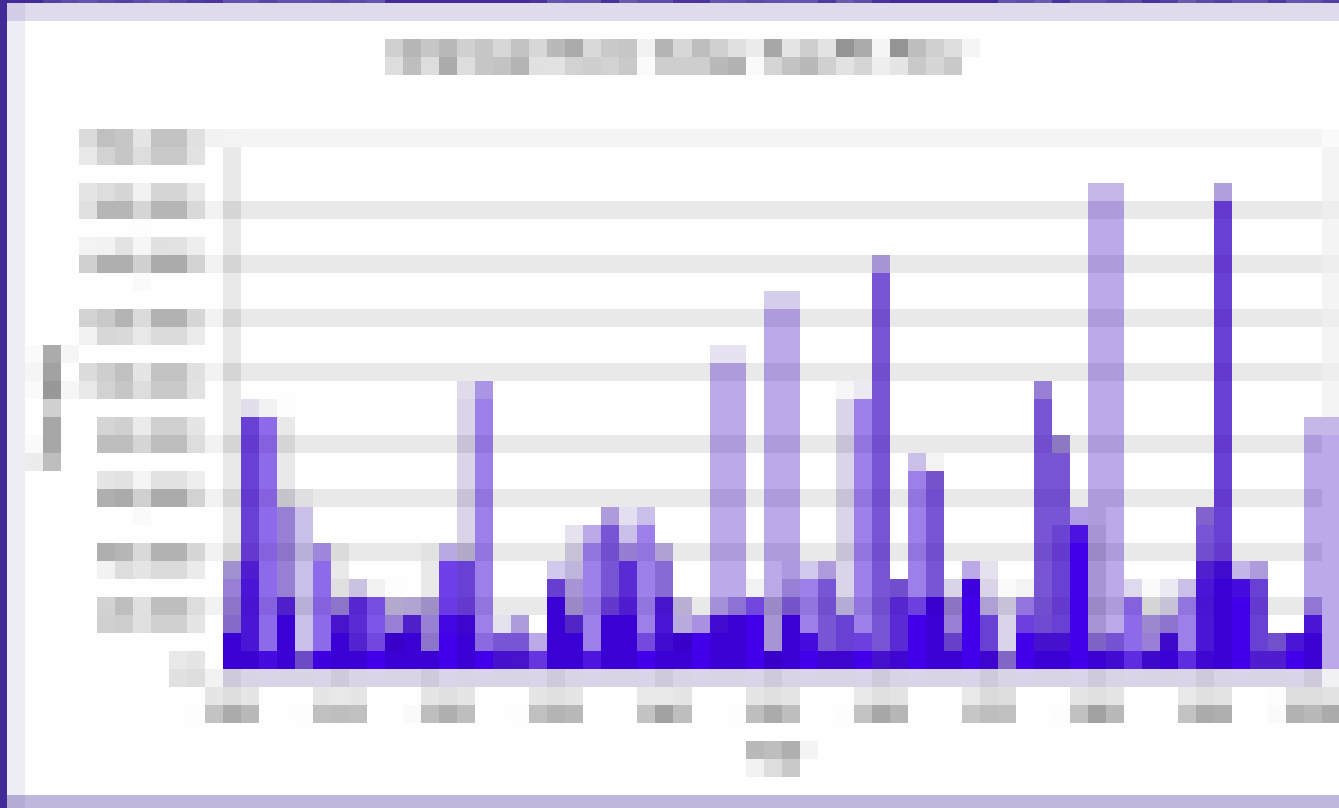


Peak Flow - Arkansas River

Peak flow is the maximum flow rate of water in a stream or river. It is typically measured in cubic feet per second (CFS) or gallons per minute (GPM).

Peak flow is often used to determine the capacity of a stream or river and to assess the risk of flooding.

Peak flow is also used to determine the amount of water that is available for use in a stream or river.



from Michael Anderson, DWR

**Separate the
record, fit,
combine**

Adjust watershed response model

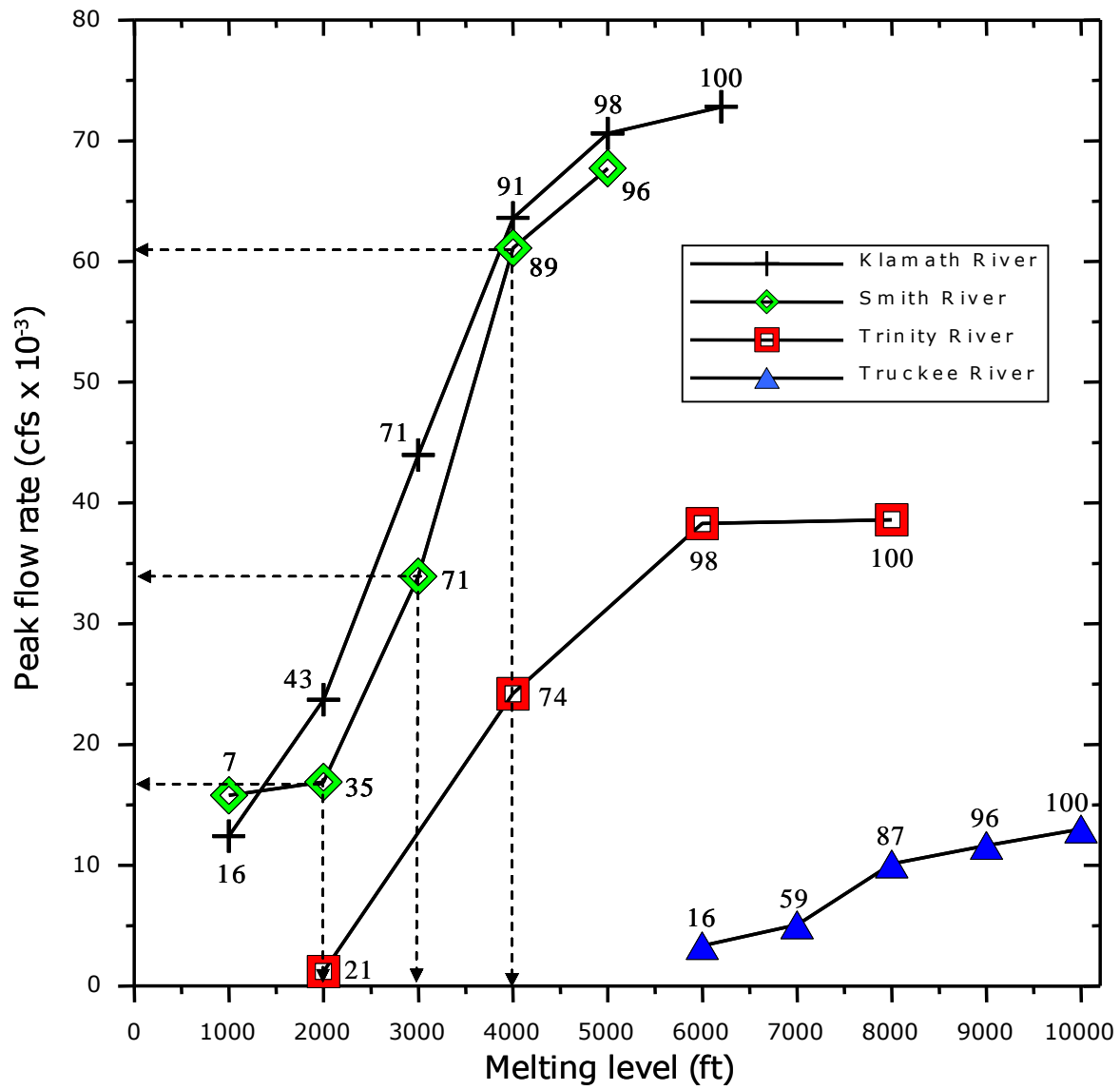


Volume of precipitation

Temperature

Time of precipitation

Snow line elevation



*from Eric Strem,
NOAA-NWS*





David Ford, PhD, PE, D.WRE

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