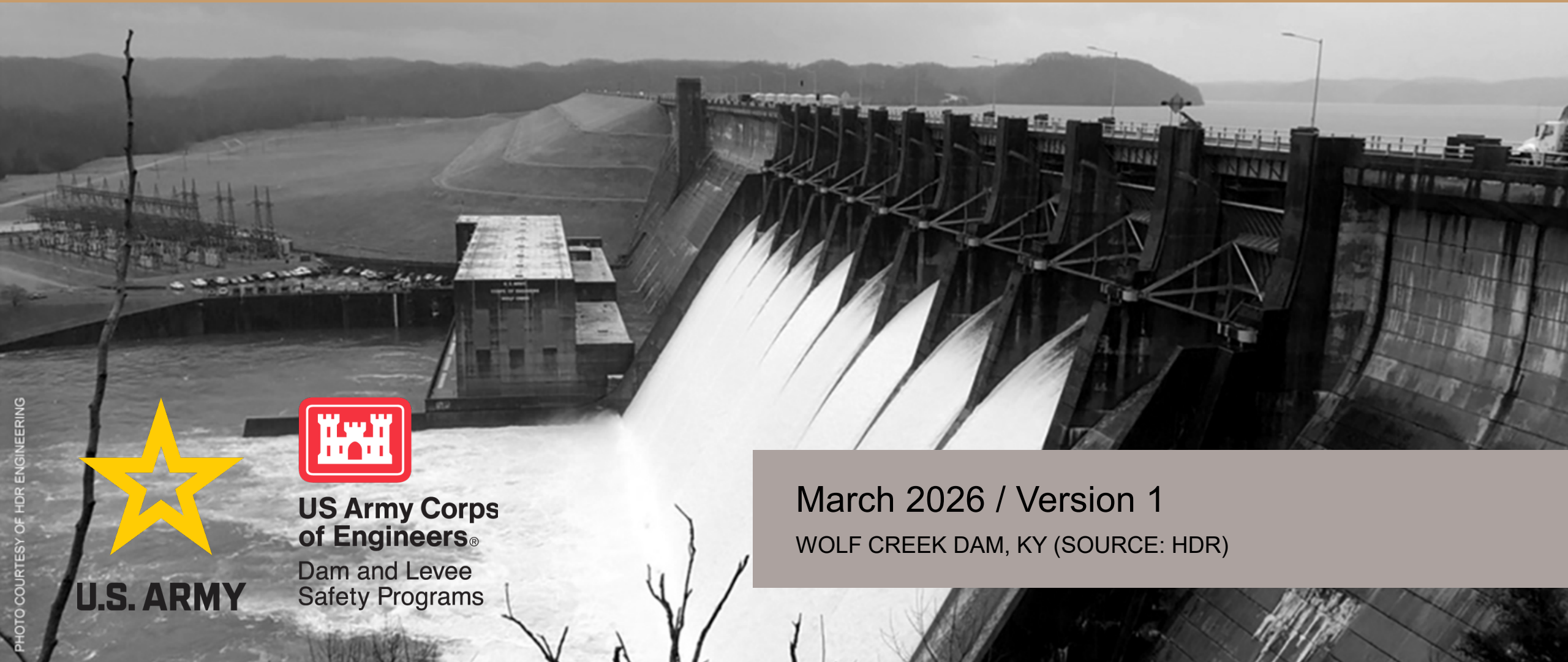


# BestFit Exercise Overview

## DLS-114, Module 1.11



**U.S. ARMY**



**US Army Corps  
of Engineers®**

Dam and Levee  
Safety Programs

March 2026 / Version 1

WOLF CREEK DAM, KY (SOURCE: HDR)

# Tasks

---

1. Research historical flood information
2. Estimate volumes and corresponding flow intervals for historical floods
3. Estimate historical periods and corresponding perception thresholds
4. Calculate a flow frequency curve given historical information

## Additional Tasks

5. Calculate a flow frequency curve given paleoflood information
6. Compare frequency curves

# Task 1

## Research Historical Flood Information

Drainage area. --1, 238 sq mi.

Gage. --Nonrecording. Datum of gage is 883.04 ft above mean sea level, datum of 1929.

Stage-discharge relation. --Defined by current-meter measurements below 90,000 cfs.

Bankfull stage. --30 ft.

Remarks. --Peaks for period 1921-23 computed from plotted Empire District Electric Co. readings at site 1, 500 ft upstream and corrected to datum of present gage. Base for partial-duration series, 22,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1898	—	40	<sup>a</sup> 94,000	1941	Jan. 3, 1941	19.44	24,800
1910	May 17, 1910	17.35	<sup>a</sup> 21,500		Apr. 20, 1941	26.3	39,500
1922	Apr. 6, 1922	10.50	9,400	1942	Nov. 1, 1941	20.5	27,200
1923	Feb. 2, 1923	21.08	28,200		Apr. 10, 1942	20.35	27,000
1924	May 1, 1924	18.35	23,500	1943	Dec. 29, 1942	31.95	59,500
1925	Dec. 20, 1924	18.12	22,900		May 12, 1943	42.33	105,000
1926	Oct. 11, 1925	12.3	<sup>b</sup> 12,300	1944	June 16, 1944	22.3	31,300
1927	Jan. 25, 1927	21.70	29,400	1945	Feb. 23, 1945	23.00	33,000
	Apr. 16, 1927	37.0	80,200		Feb. 28, 1945	21.40	29,200
	Apr. 20, 1927	25.10	36,300		Mar. 4, 1945	19.96	26,100
					Mar. 20, 1945	28.25	47,100
					Apr. 1, 1945	22.65	32,000
					Apr. 16, 1945	40.9	98,200

# Task 2

---

## Estimate Volumes and Flow Intervals for Historical Floods

Flood	Water Year	Peak Flow (cfs)	Maximum 4-Day Volume (cfs)	Ratio of Peak to Volume
April 1927	1927			
May 1943	1943			
April 1945	1945			

# Task 3

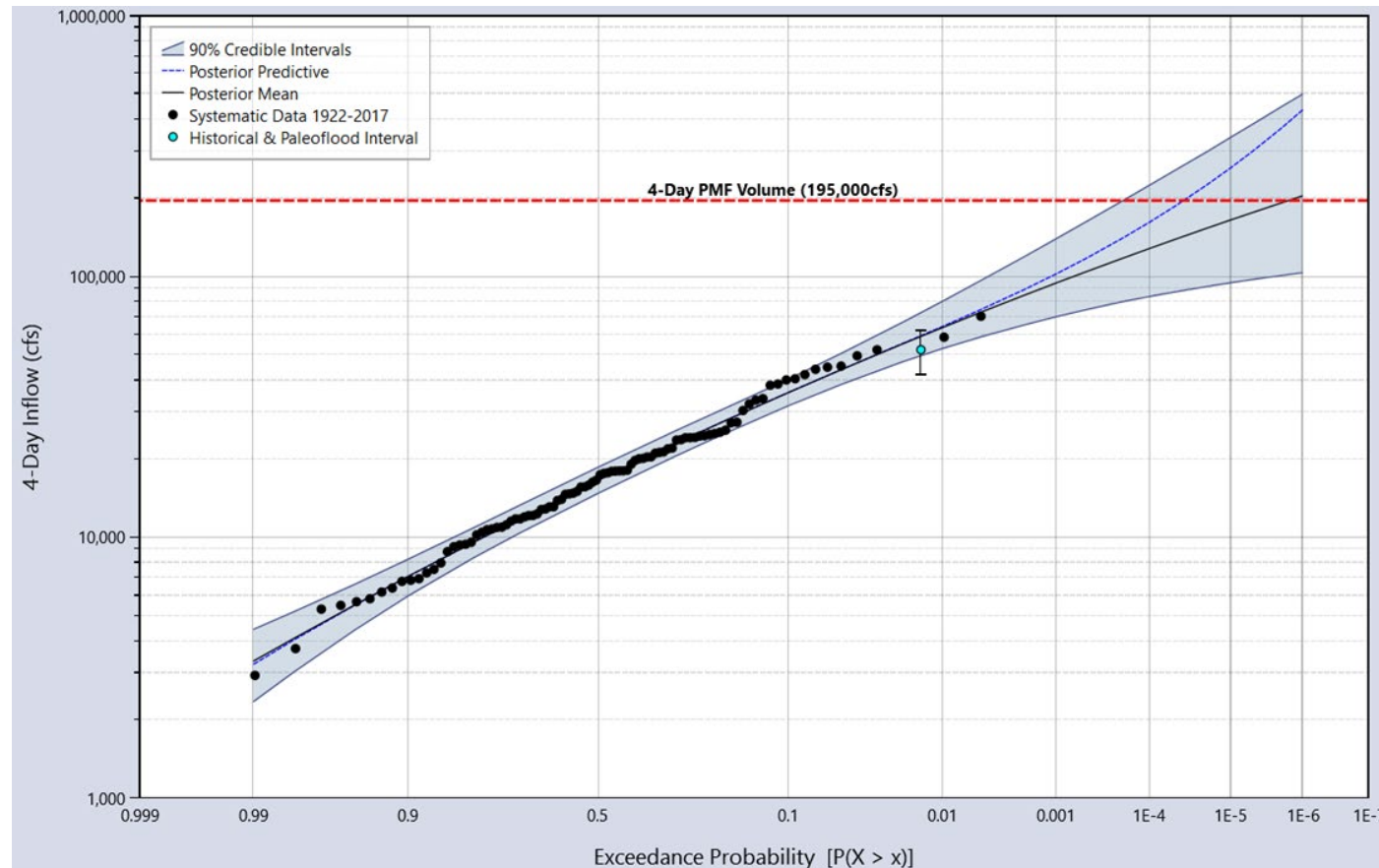
---

## Estimate Historical Periods and Corresponding Perception Thresholds



# Task 4

## Calculate a Flow Frequency Curve Given Historical Information



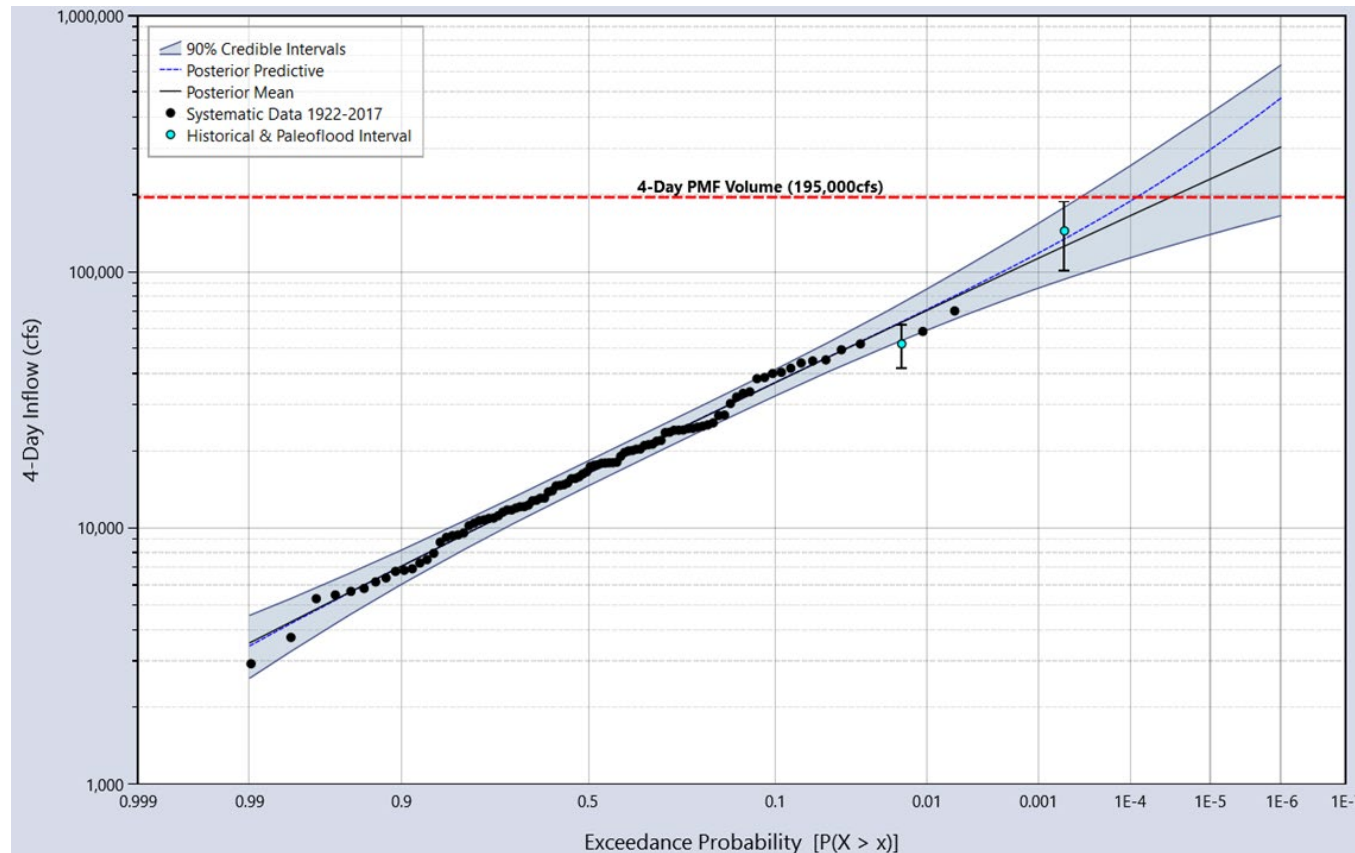
**Mean:**  
**Standard Deviation:**  
**Skew:**

# Additional Tasks



# Task 5

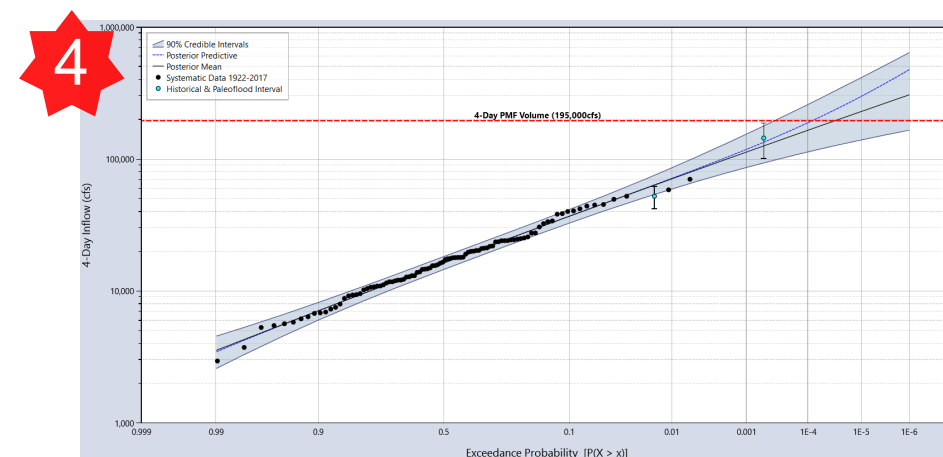
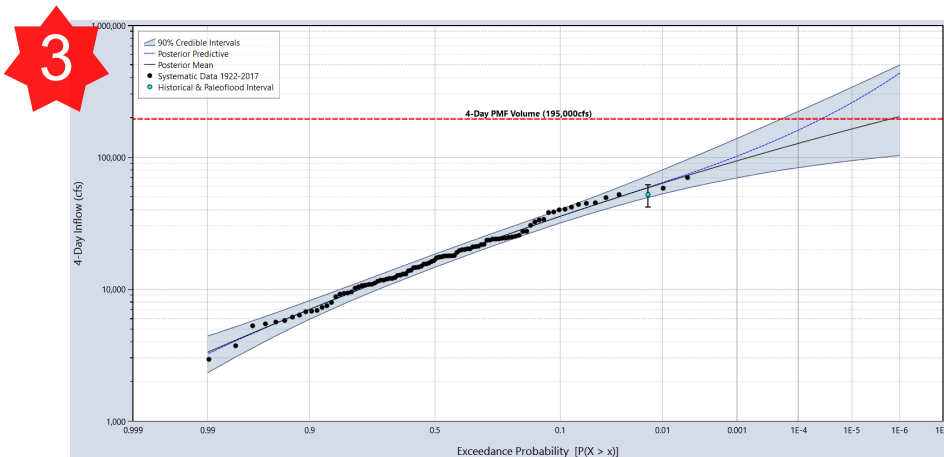
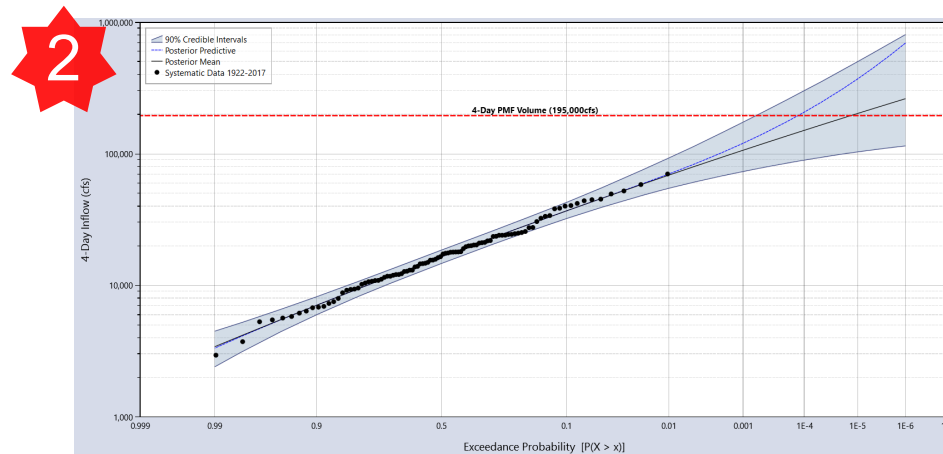
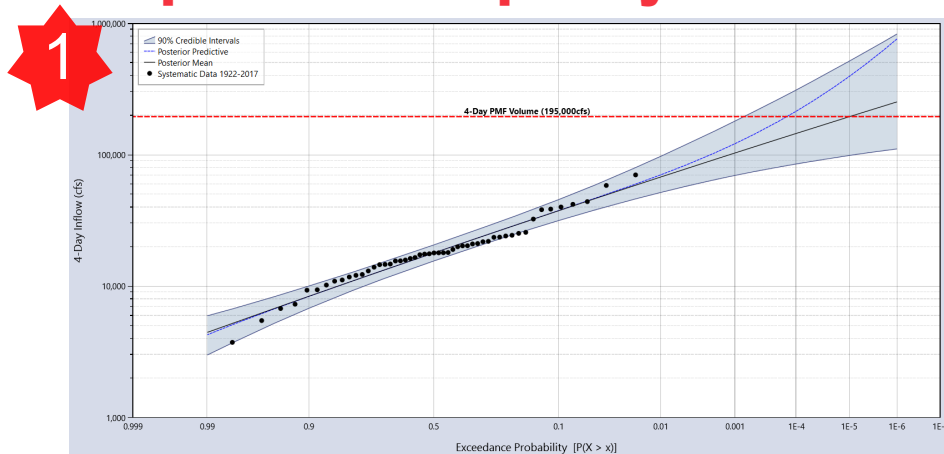
## Calculate a Flow Frequency Curve Given Paleoflood Information



**Mean:**  
**Standard**  
**Deviation:**  
**Skew:**

# Task 6

## Compare the Frequency Curves



---

# ? Questions

