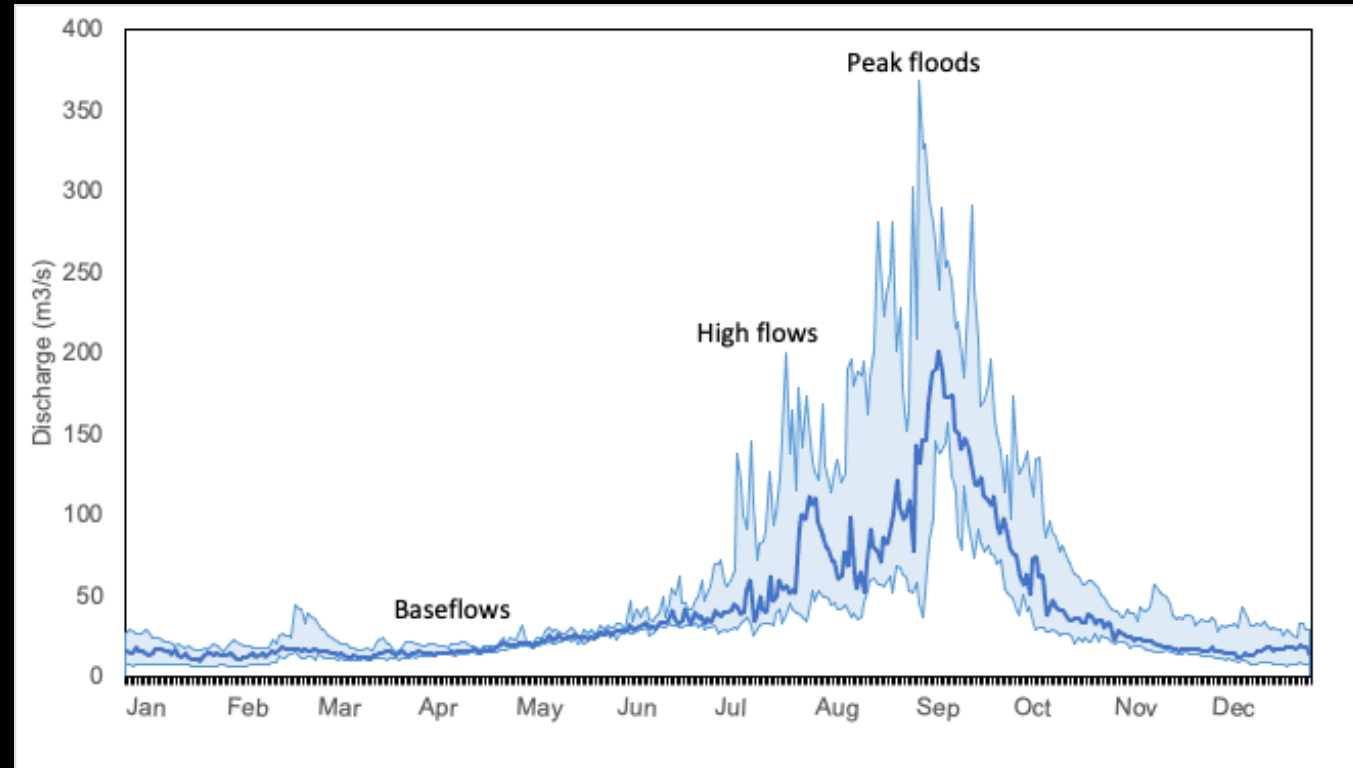
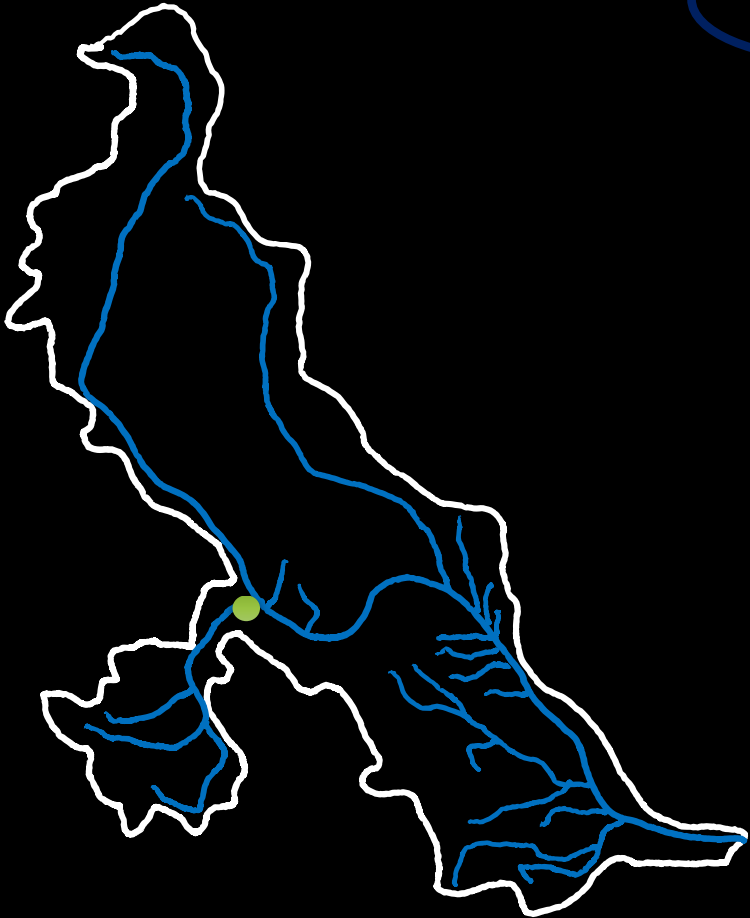


*Unraveling the power of
the natural flow regime*

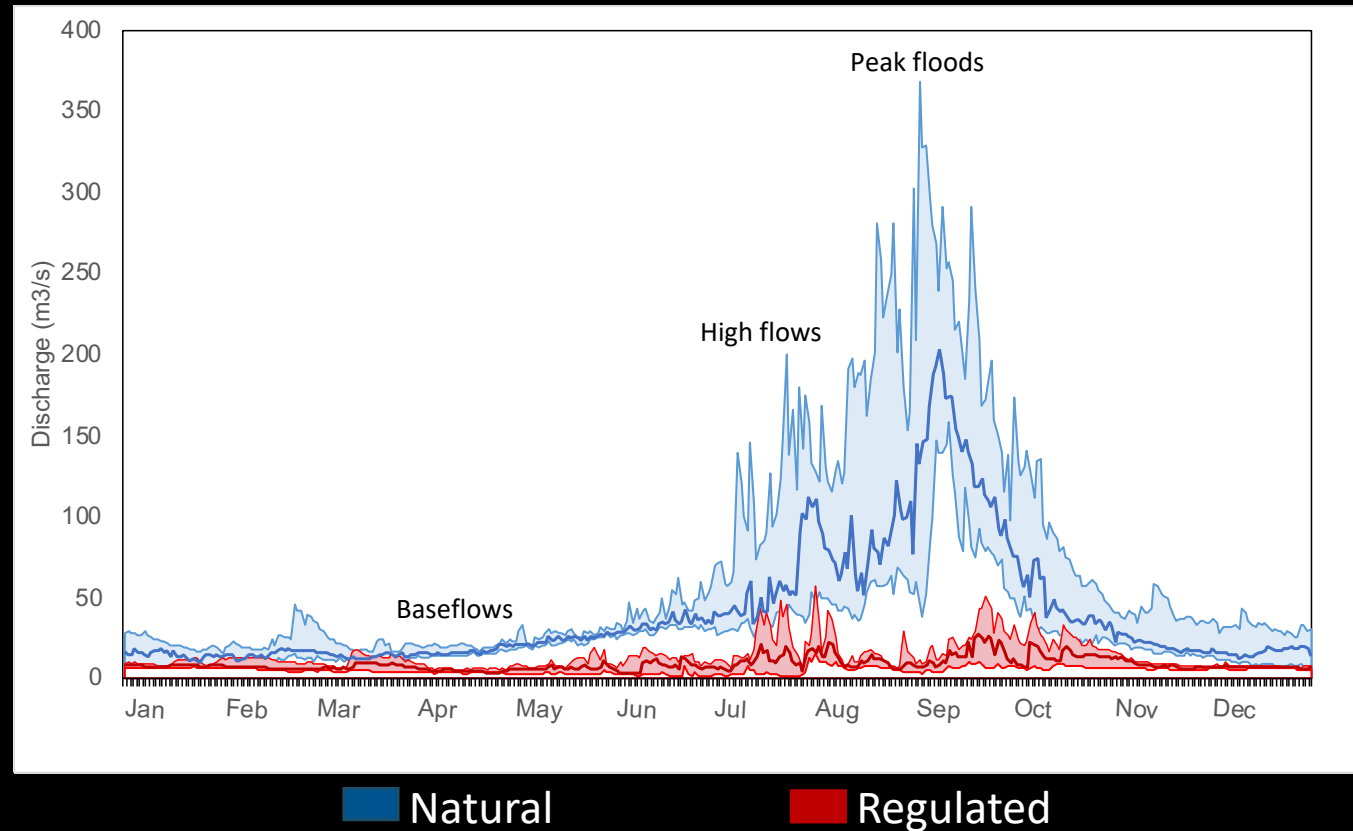
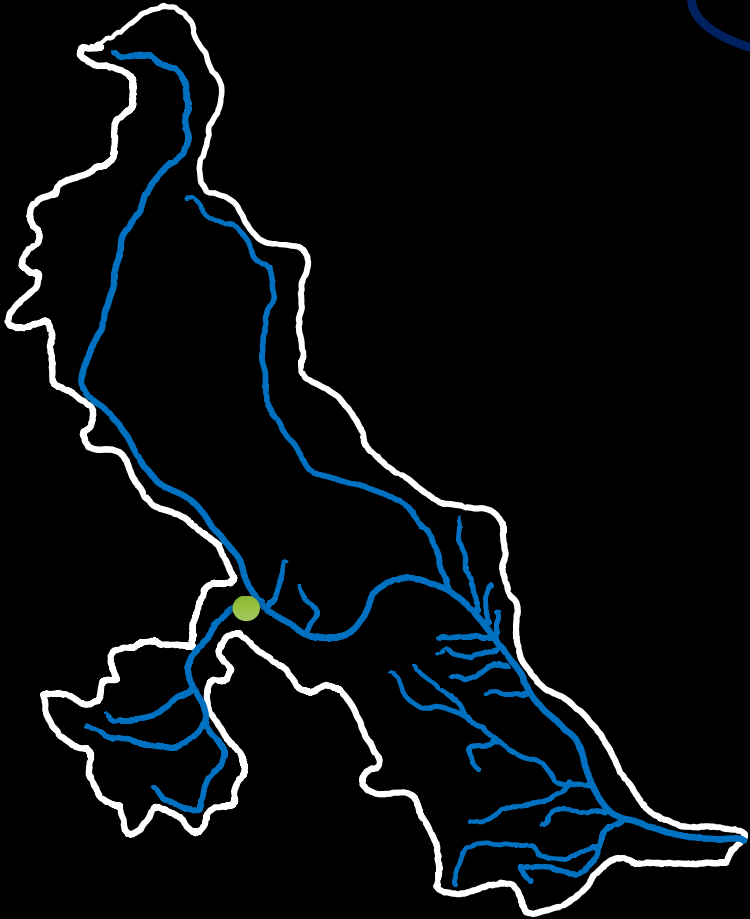


Unraveling the power of the natural flow regime



■ Natural

Unraveling the power of the natural flow regime



Unraveling the power of the natural flow regime



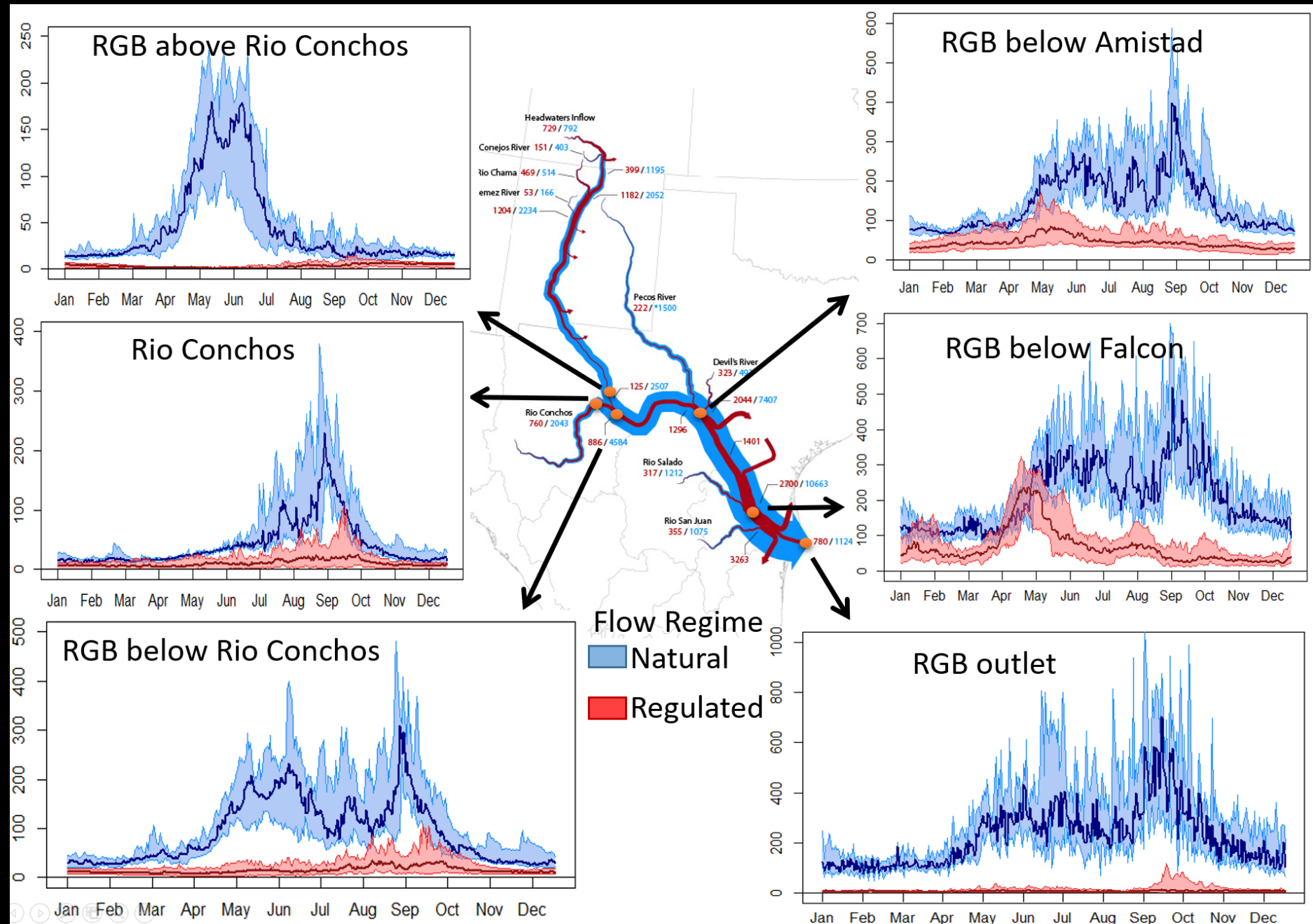
To understand:

- The River basin's identity (flow regimes)
- Ecosystem responses
- Seasonal and interannual hydrologic variability
- River basin resilience

1. The River basin's identity

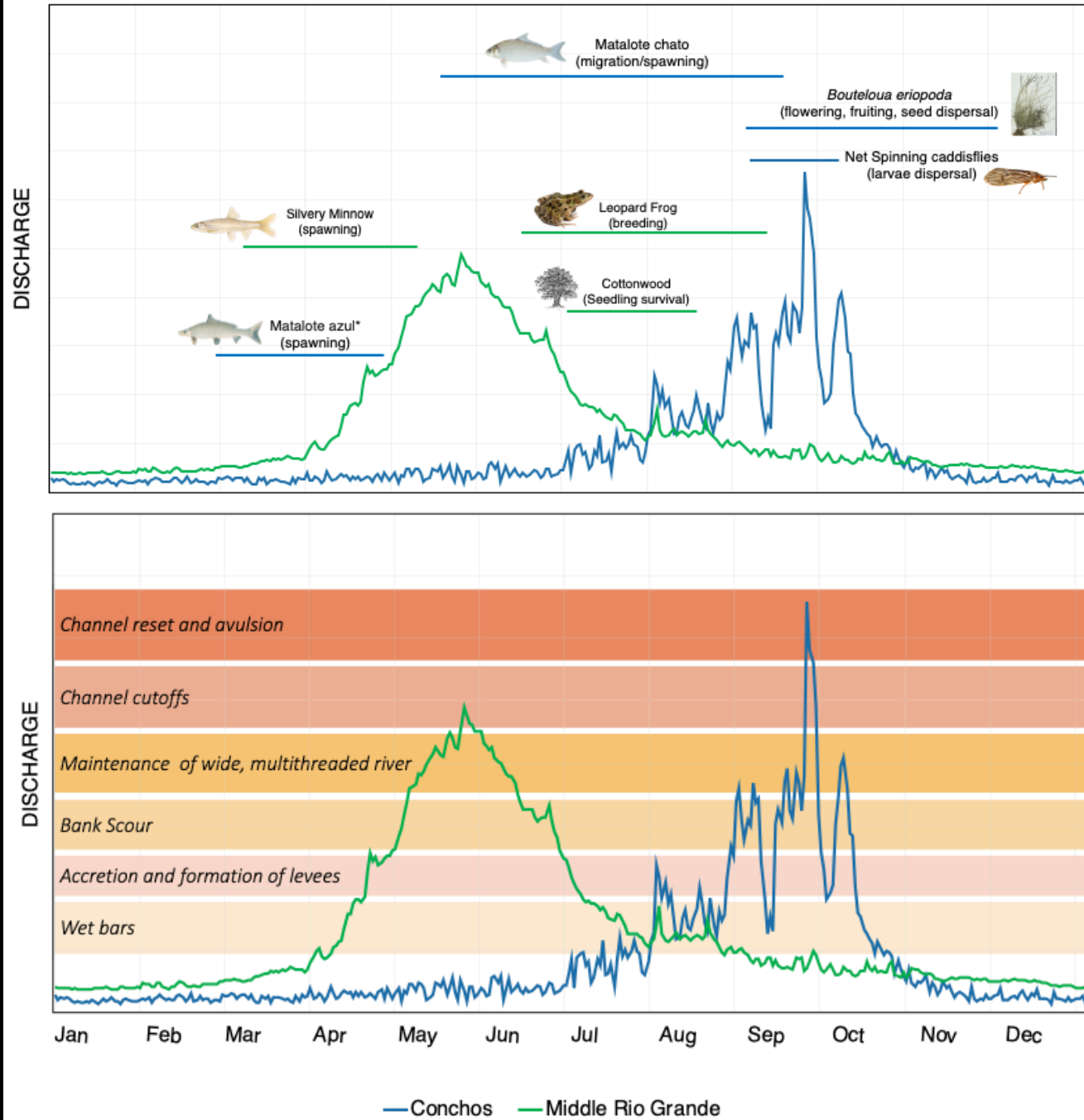
-Daily naturalized flow database for 110 years

-Hydrologic river classification
E.g. snowmelt, monsoon, bimodal,



2. Ecosystem responses

- Identification of biological and geomorphic responses to flow
- Environmental flow recommendations

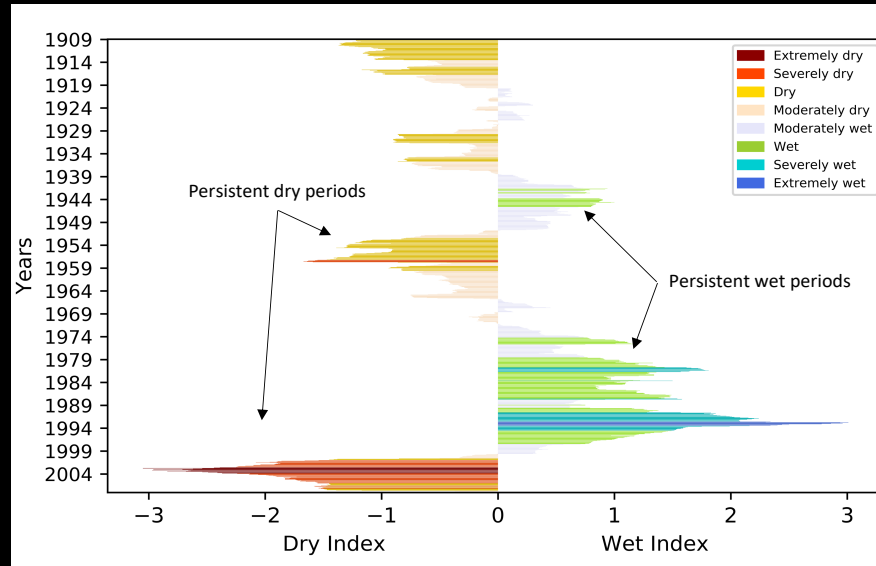


Dry and Wet period analysis

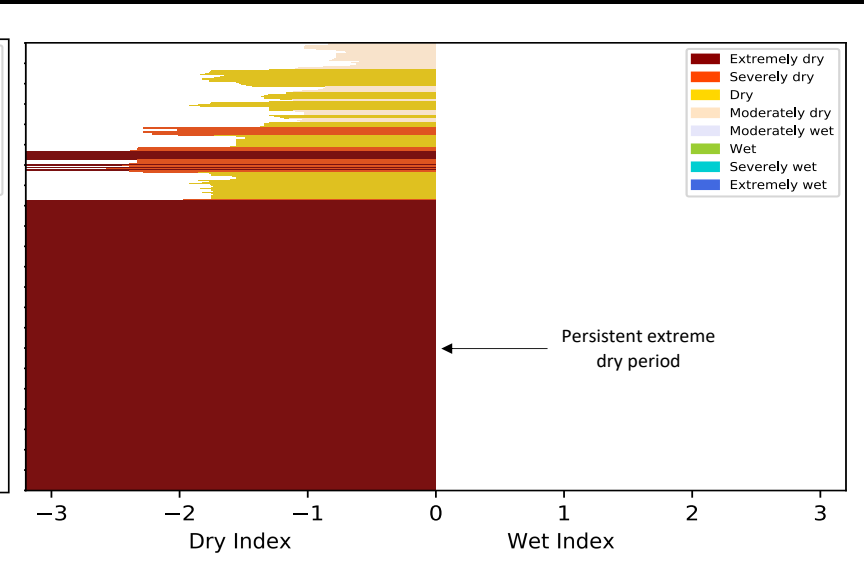
Gauge: Ojinaga

3. Hydrologic variability and River basin resilience

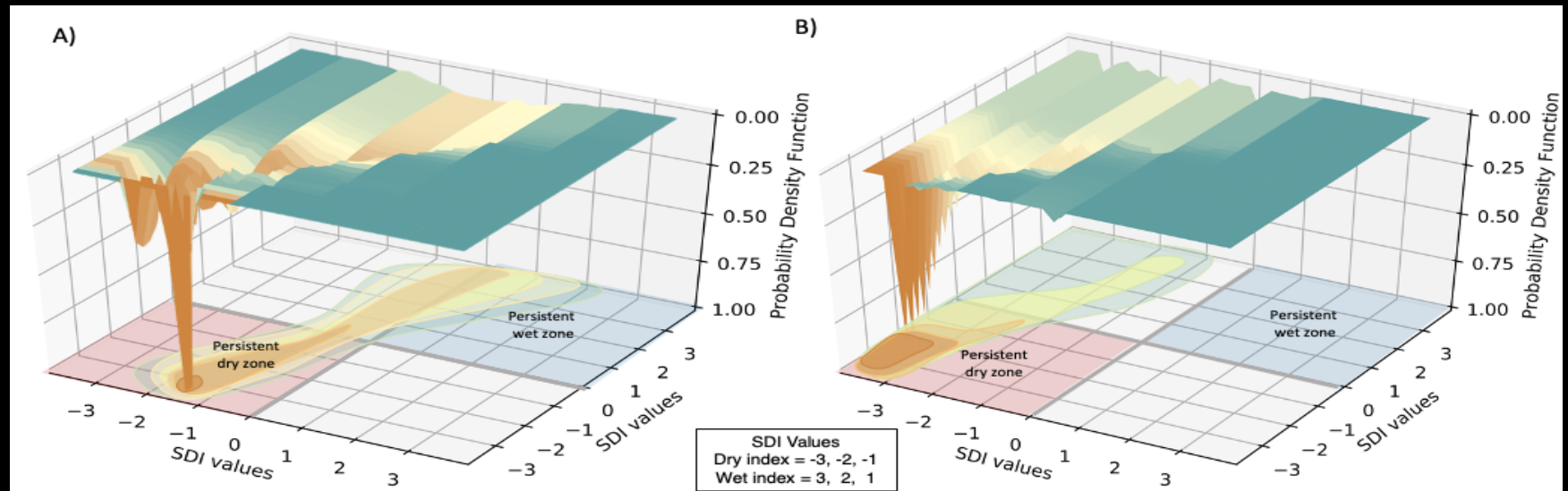
Natural Streamflow System



Regulated Streamflow System



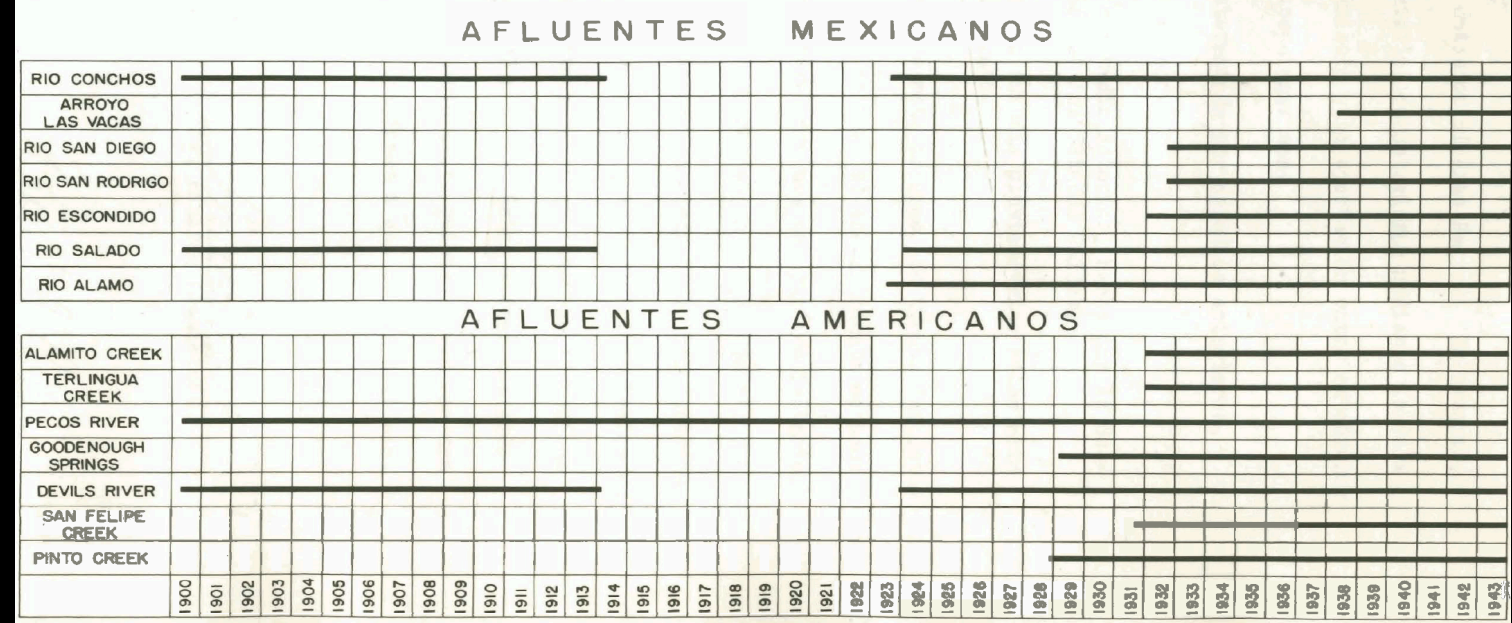
Resilience quantification and visualization



Main research challenges

-Data, data, data!

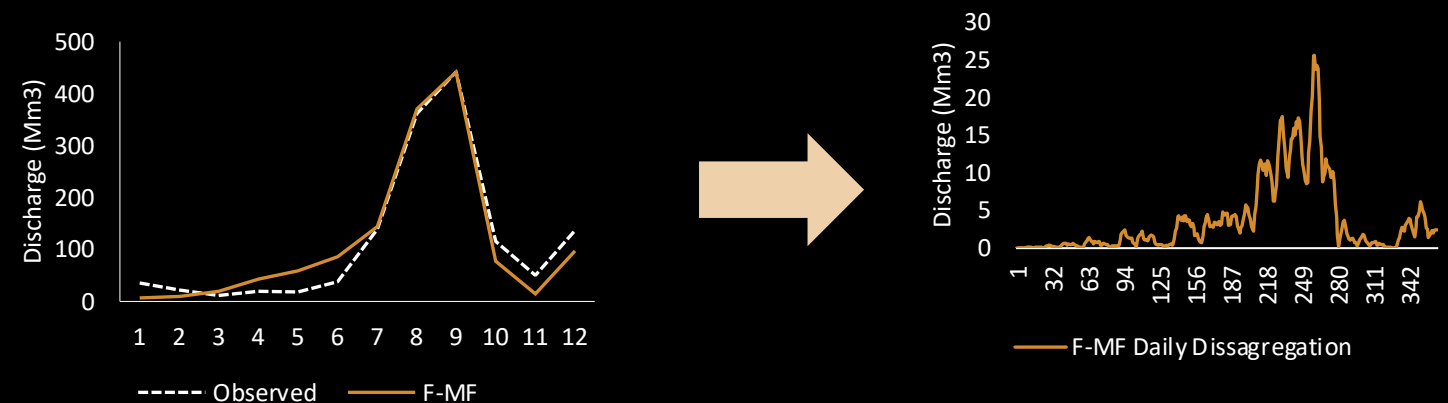
Massive amount of data, gaps, outdated gauge stations etc.



Inputs	Source	Control Points (CP)	Period of record	Time Step
Natural Streamflow	• Blythe et al. (2018)	33 CP of the Upper RGB	1900 – 2010	D
	• Escorcia-González, Y. (2016)	13 CP mainstem of the lower RGB	1900 – 1913	D
	• Loredó-Rasgado, J (2018)	13 CP mainstem of the lower RGB	1900 – 1943	M
	• Silva, H. (2008)	37 CP for the Lower RGB	1950 – 2008	M

-Filling gaps and data disaggregation

Fractal-Multifractal Approach, visual evaluation of 10,000 hydrographs per year, per gauge



Main Professional challenges

- Underrepresentation
- Harassment

Rio Bravo Basin Council



Binational Summit on Groundwater at the US-Mexico Border.

