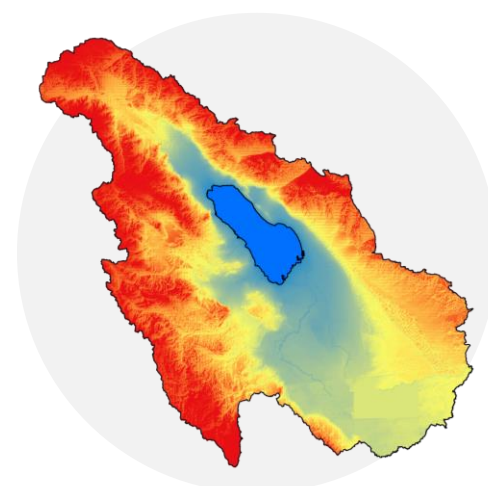


Understanding the Hydrologic Response Mechanisms of the California's Largest Lake in a Highly Managed Endorheic Basin

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University of California – Riverside

STUDY AREA



Salton Sea Basin
Area: 21,790 km²
Climate: Semi-arid
Land-use: Agriculture

STUDY MOTIVATION

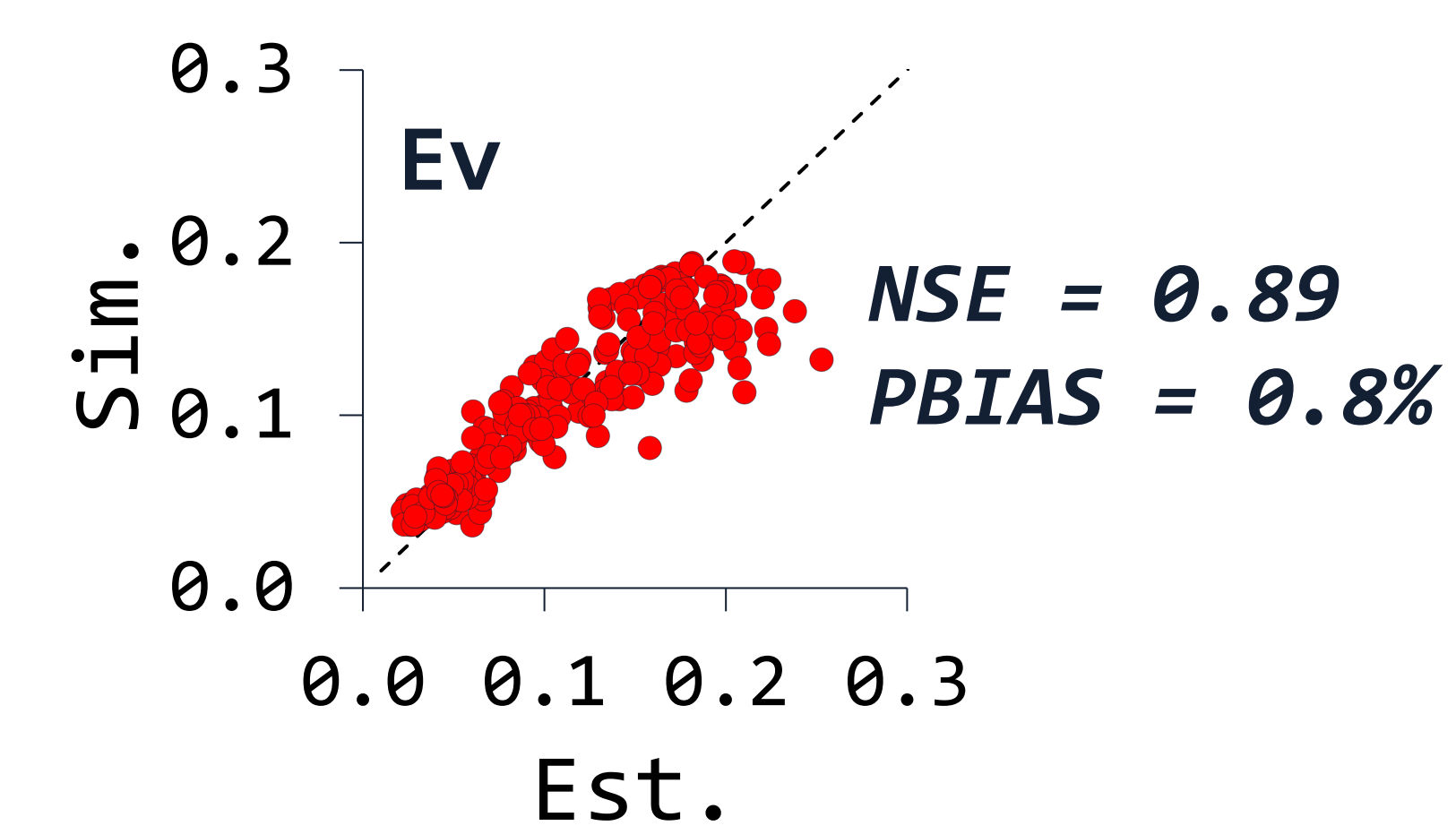
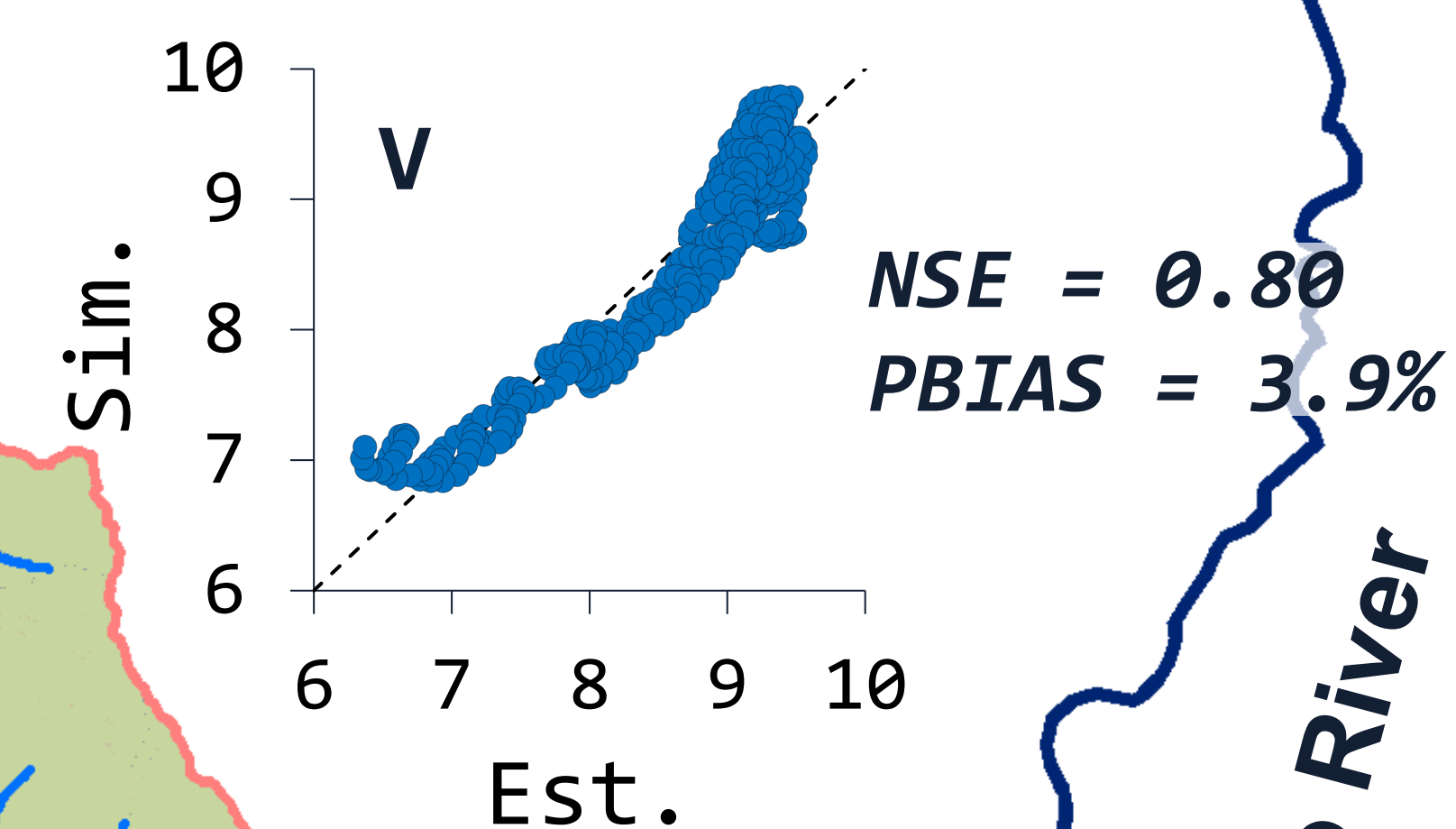


NSF INFEWS Project
Sim. eco-hydro. dynamics
Evaluate restoration plans

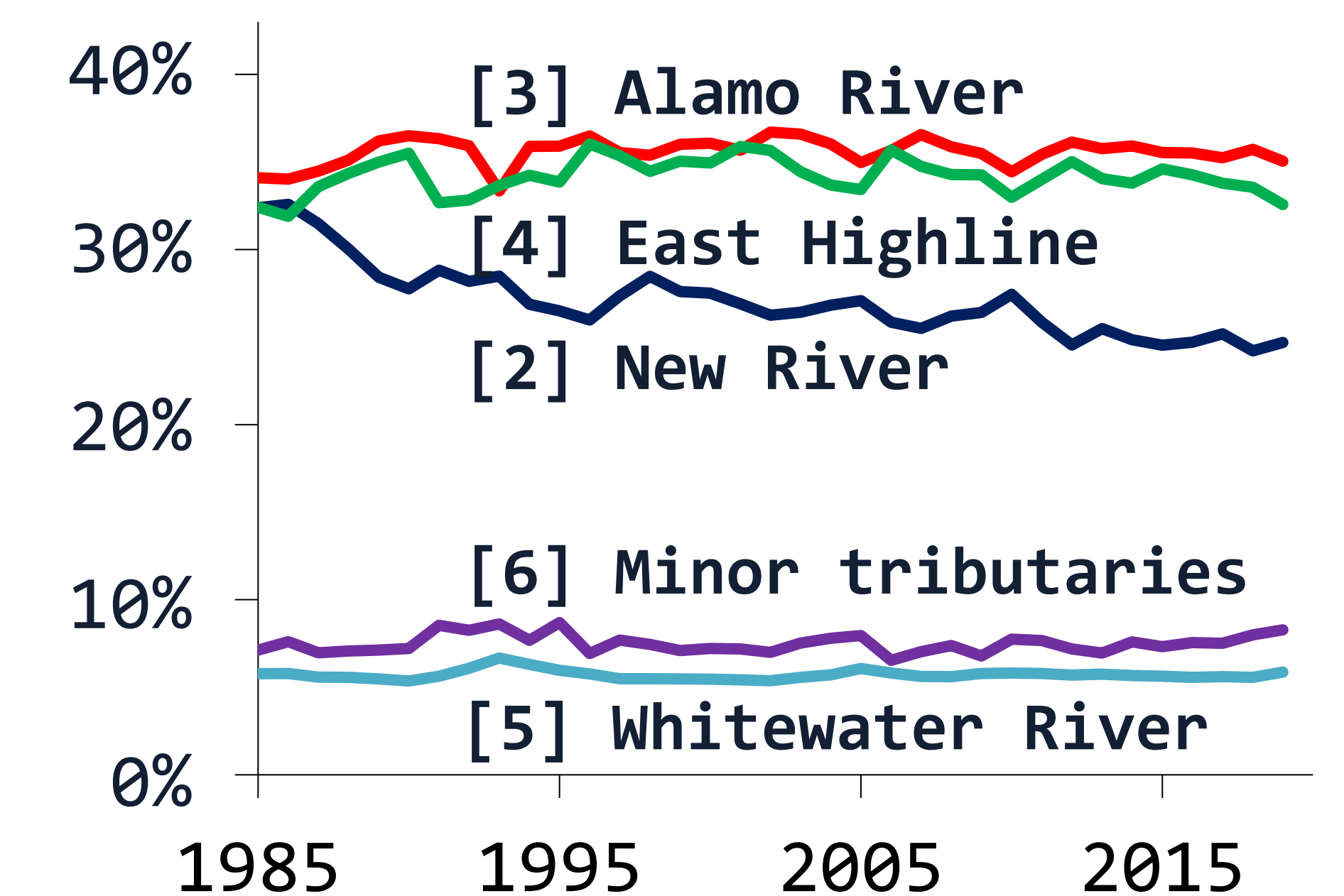
PRELIMINARY RESULTS

Model Calibration

Lake evaporation and volume [Bm³]

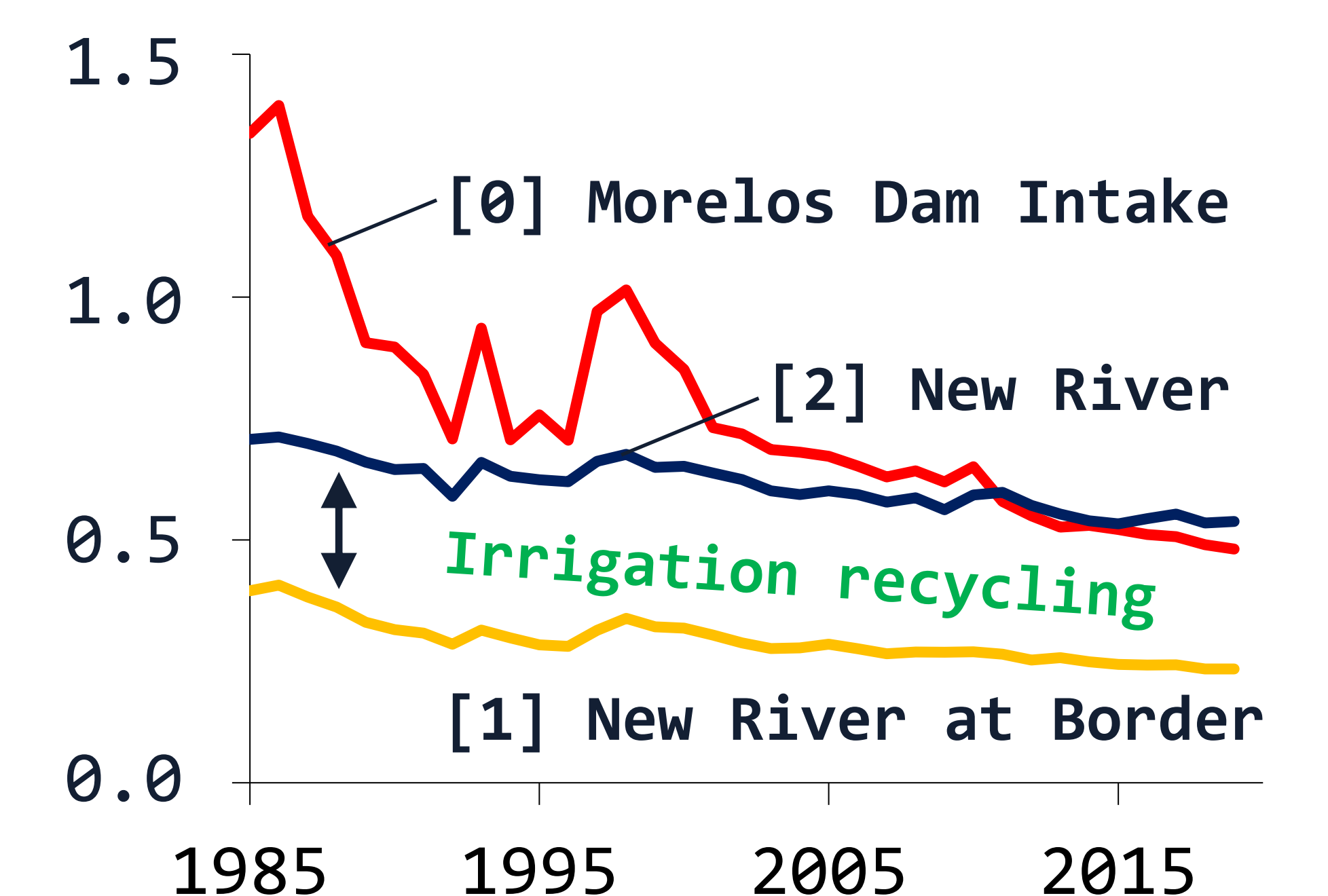


Surface Flow to the Lake



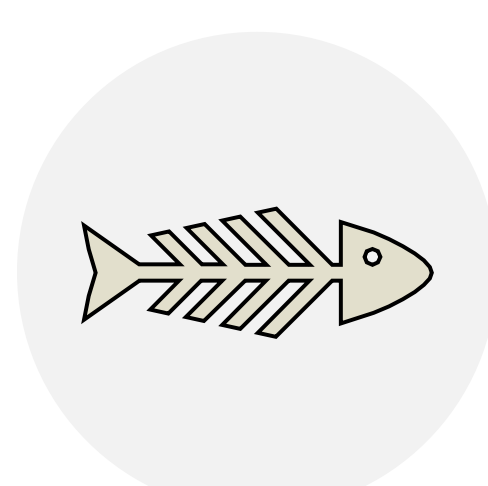
Only New River contribution is declining over time.

New R. Sources & Divers. [Bm³]

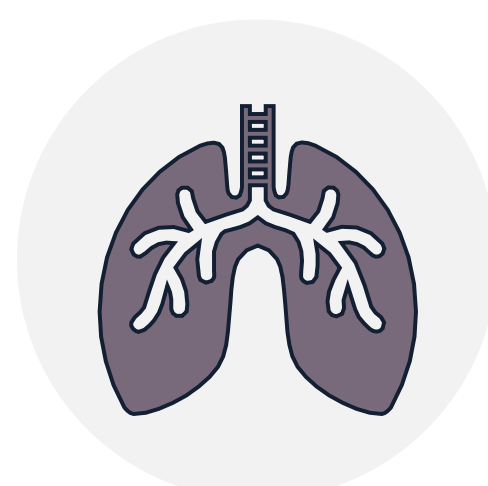


Preliminary results suggest decreases in Colorado R. allocation are causing the lake to shrink, not changes in the irrigation efficiency as commonly believed.

ENVIRONMENTAL ISSUES



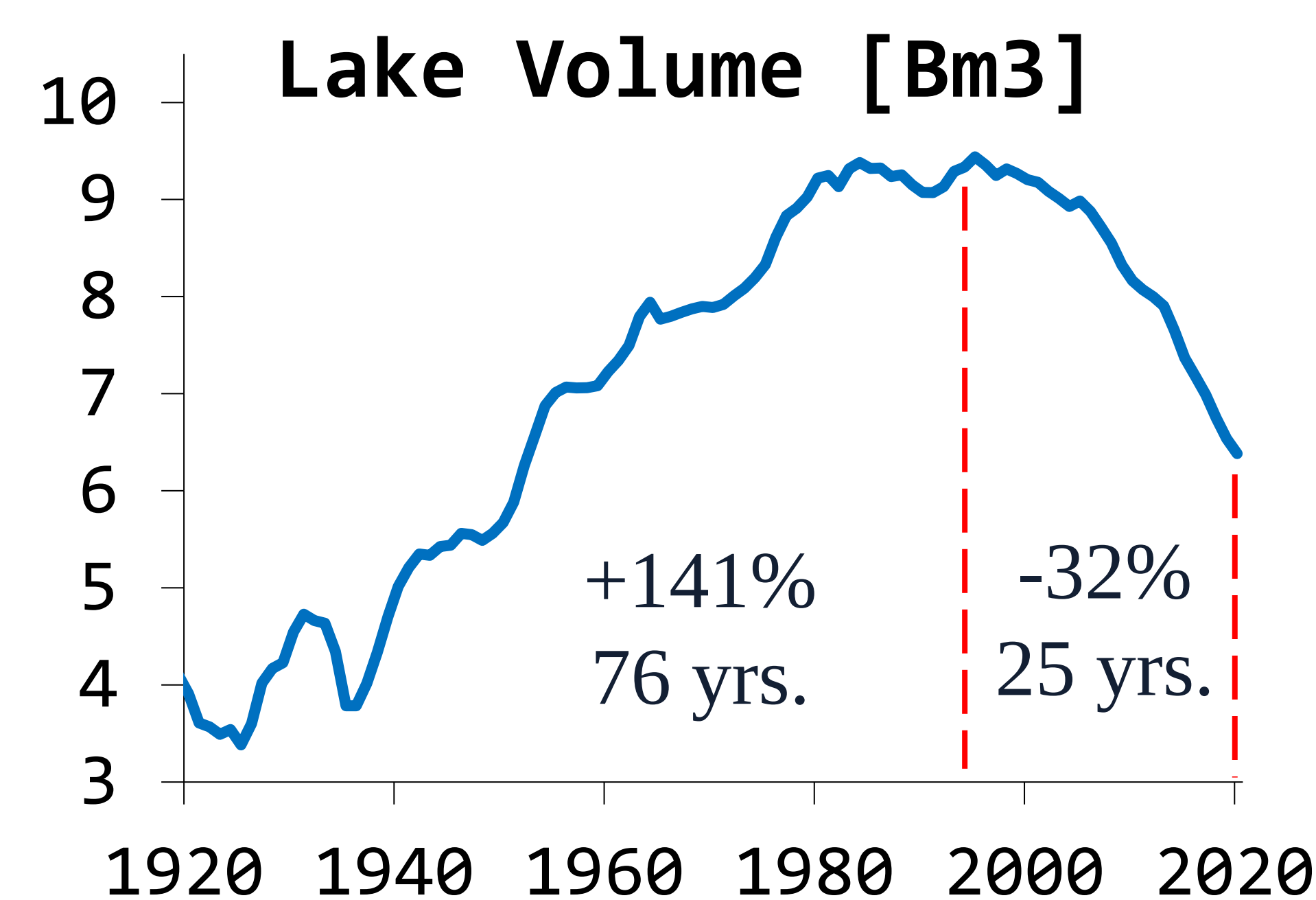
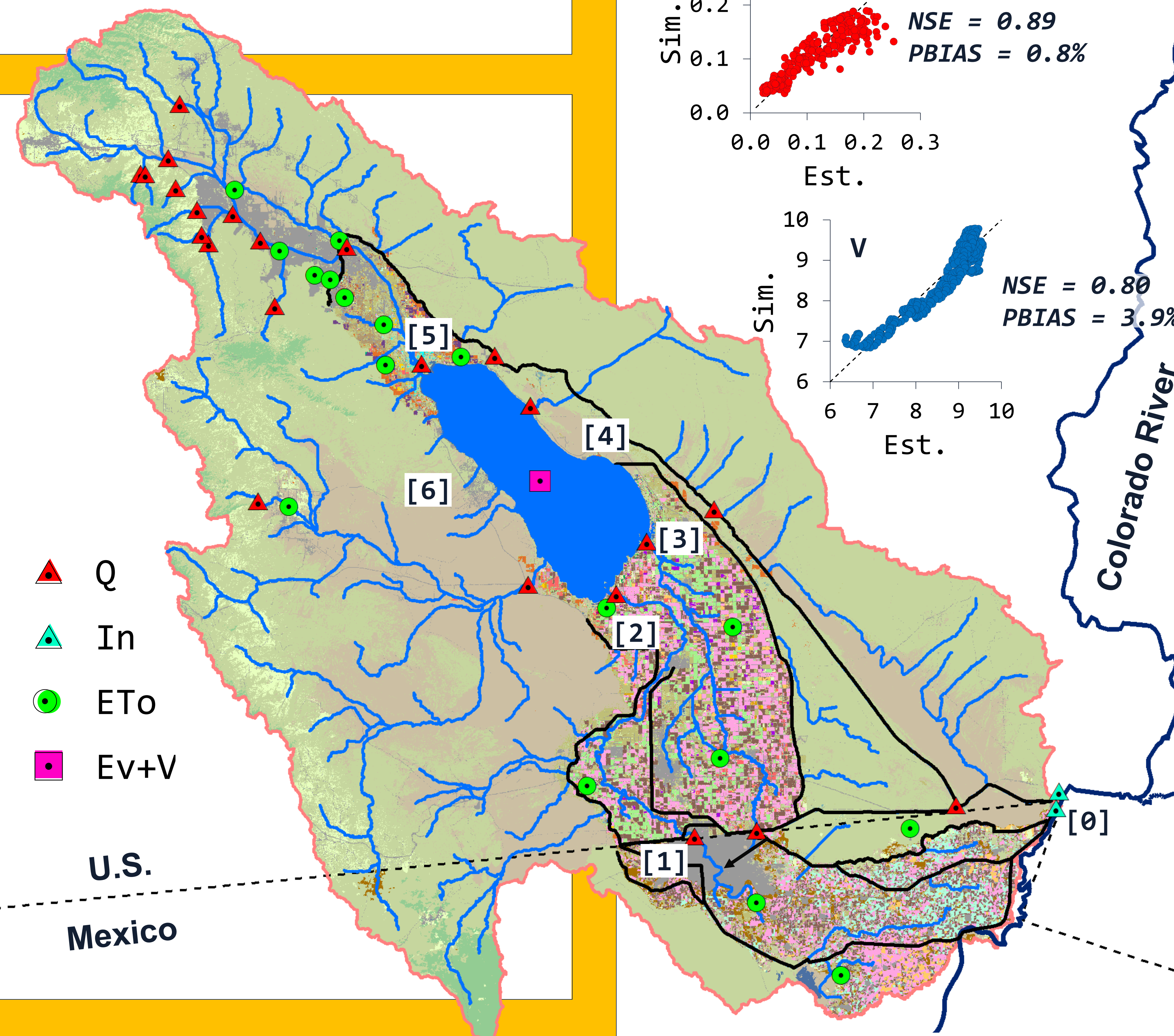
Fragile Ecosystem
Declining lake levels
High salinity and anoxia
Massive bird/fish die-off



Public Health Issues
Toxic dust from playa
Low air quality
Regional asthma crisis



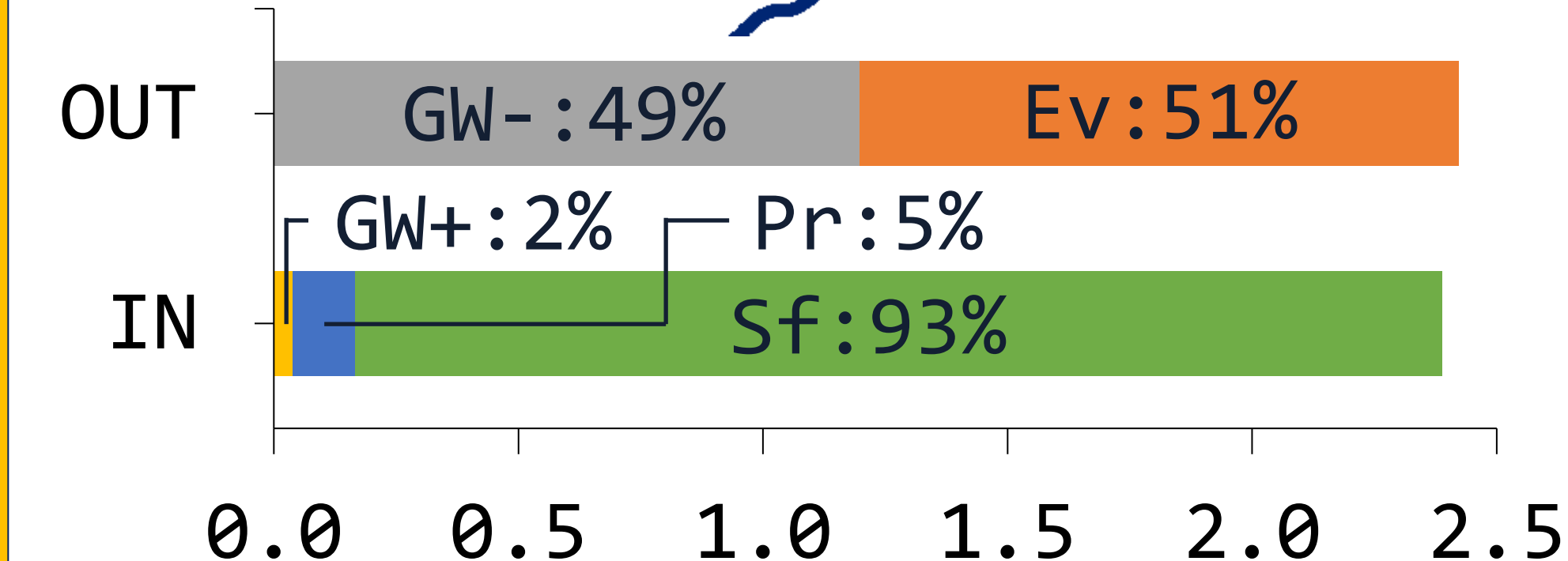
Water Conflicts
Imported water
Irrigation/user demand
Transboundary issues



MATERIALS & METHODS

- Model: SWAT v.681 ~ 1985-2019
- Evaluation: Q, PET, Lake Ev & V
- Analysis: Time series data mining

Annual Budget [Bm³]



ACKNOWLEDGEMENTS



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