



**WEST
CONSULTANTS**

WATER | ENVIRONMENTAL | SEDIMENTATION | TECHNOLOGY



NEVADA
IRRIGATION
DISTRICT

NID-PFW HEC-HMS Development

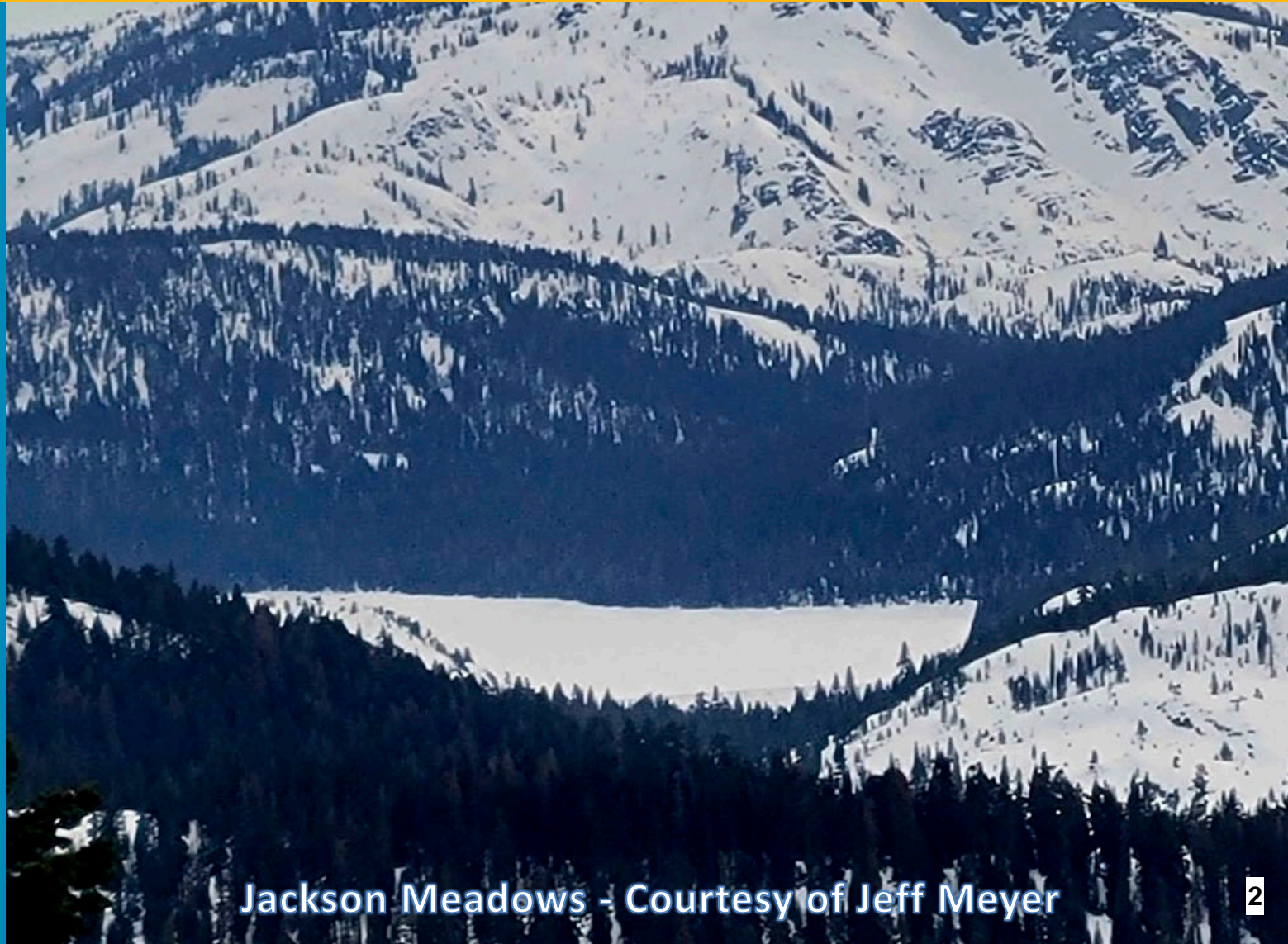
April 11, 2023



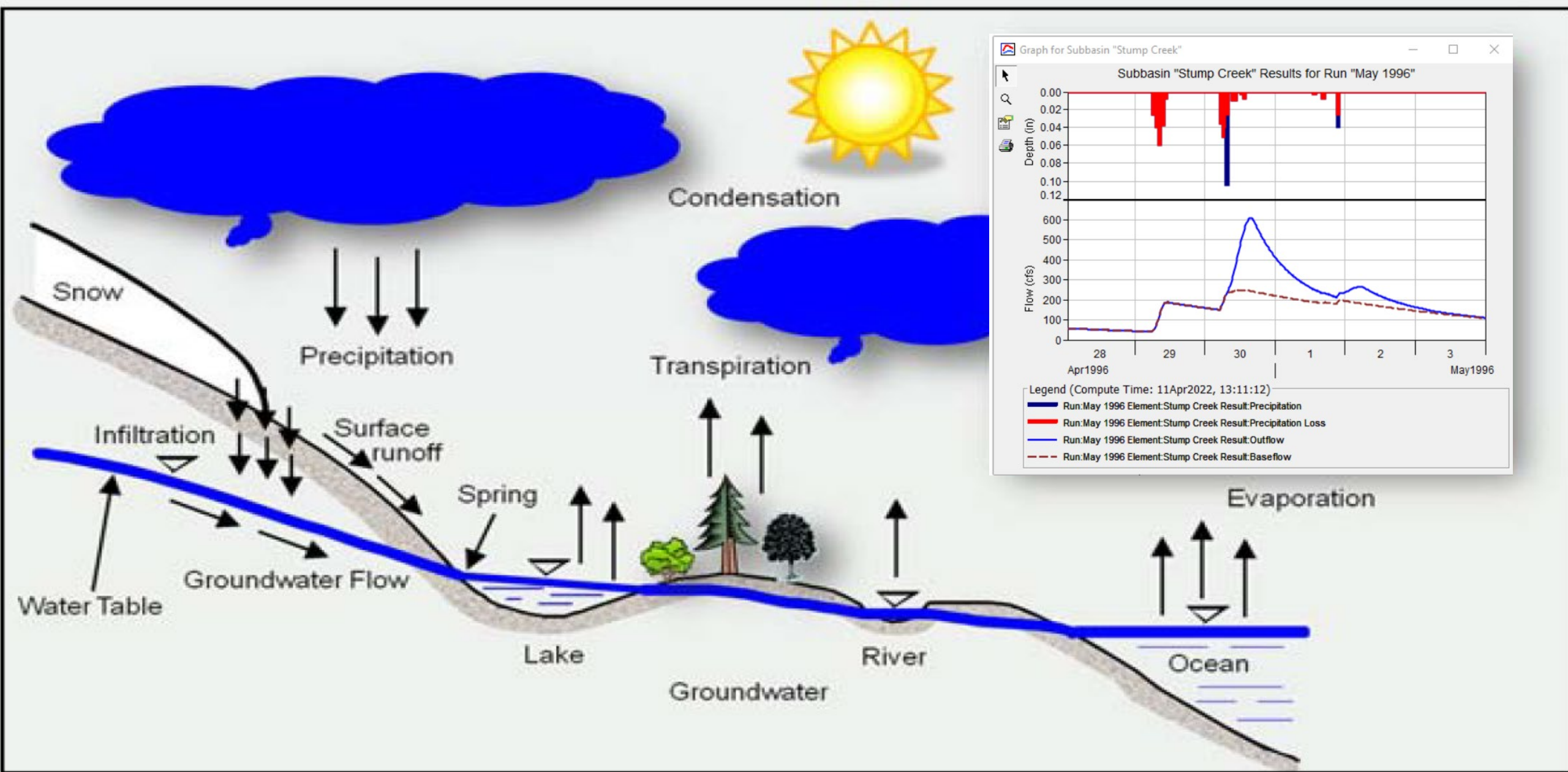
Agenda

HEC-HMS Description

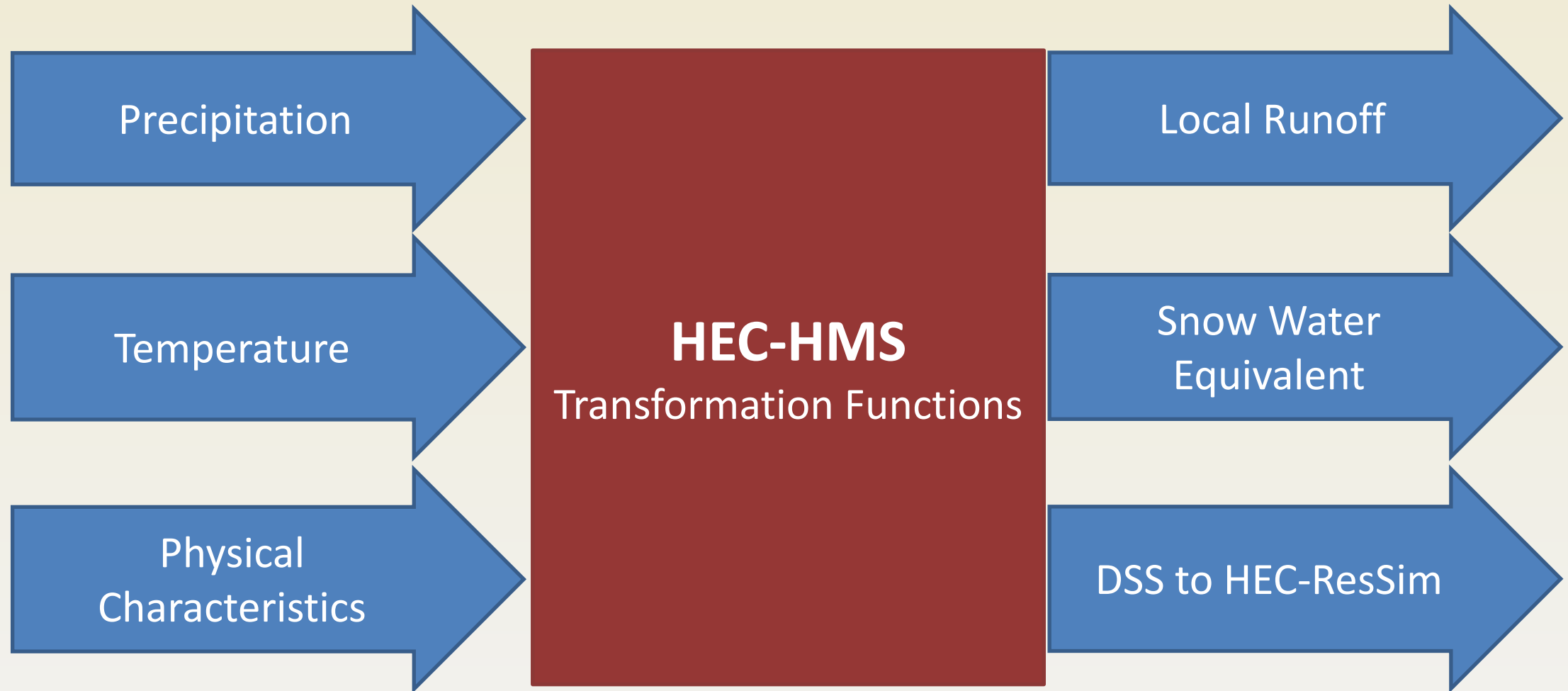
- Data Collection
- Model Calibration
 - Snow
 - Runoff
 - Validation
- Application



Jackson Meadows - Courtesy of Jeff Meyer

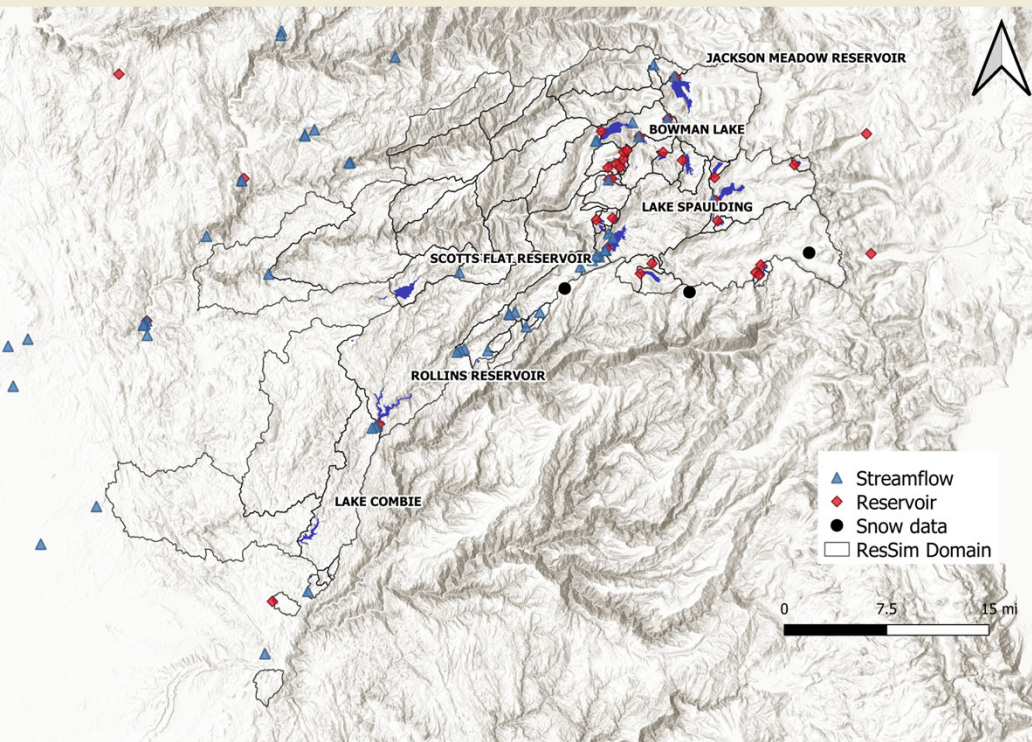


Hydrologic Modeling System (HEC-HMS 4.10)

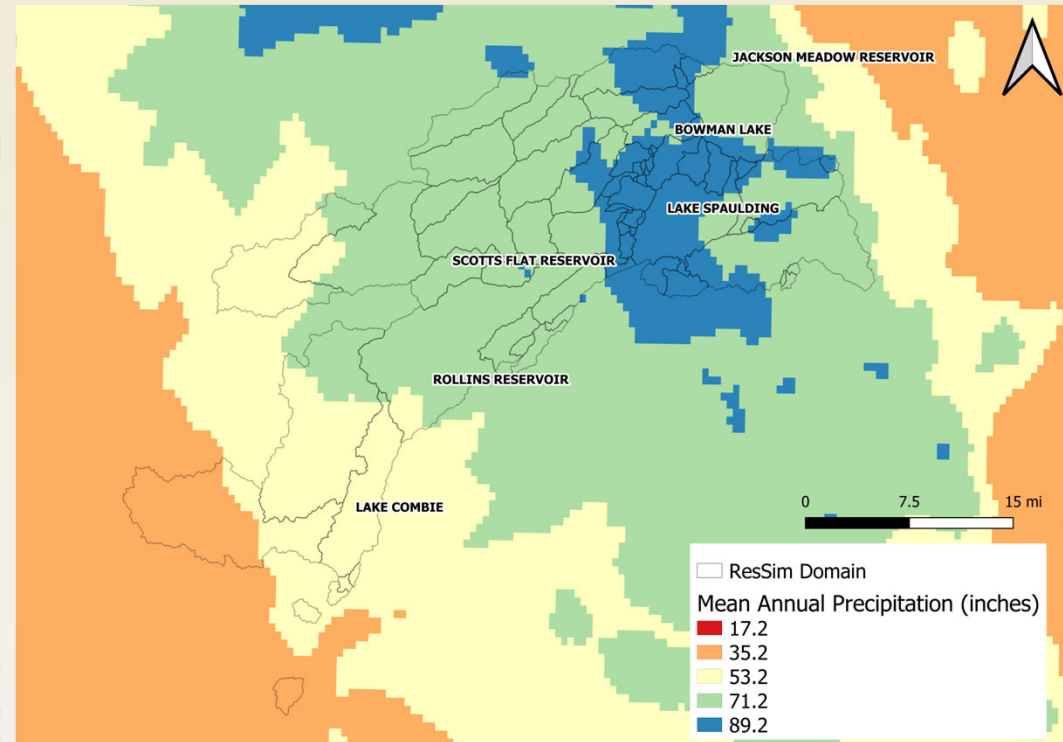


Data Collection

Point Local Data

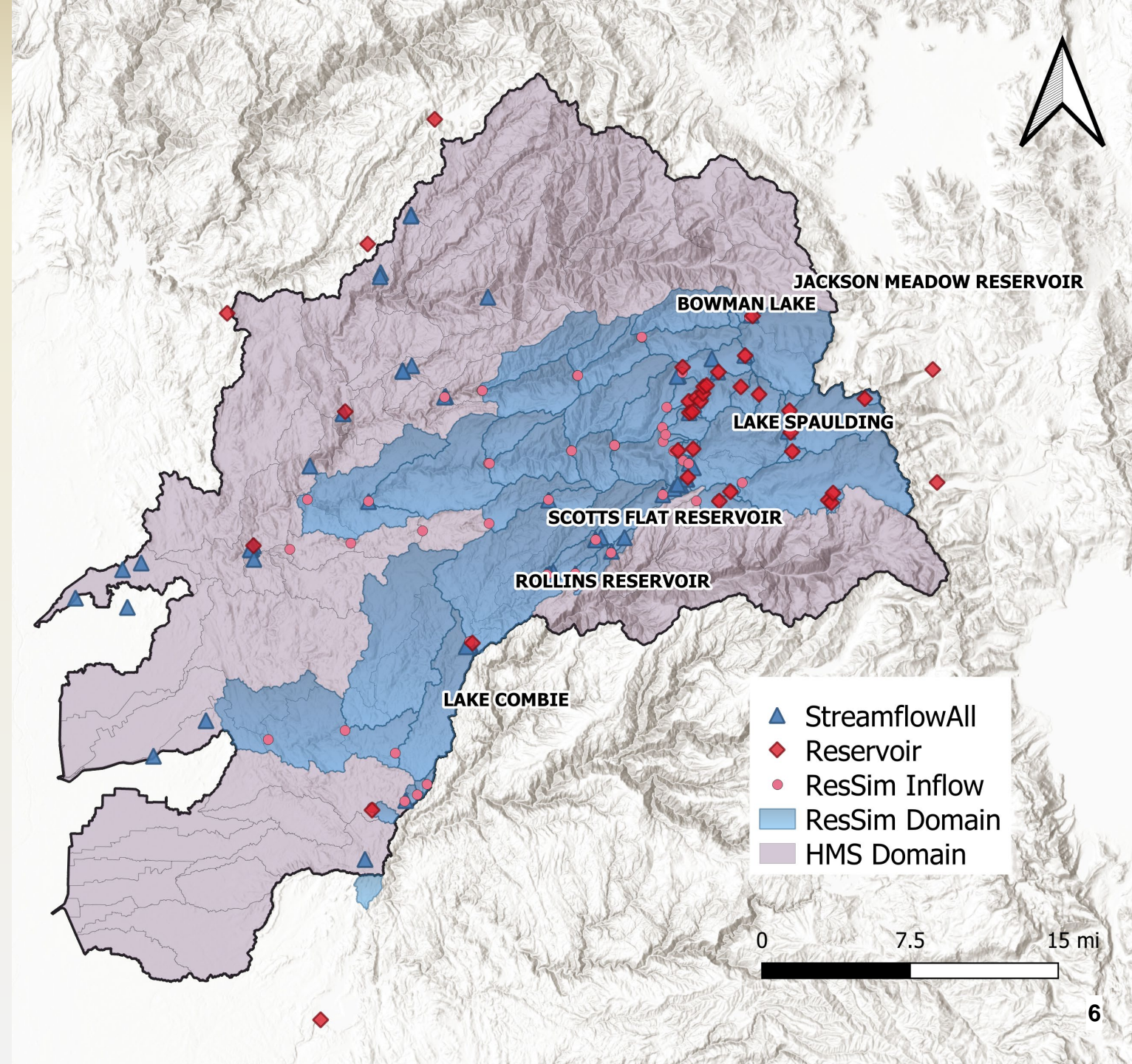


Gridded



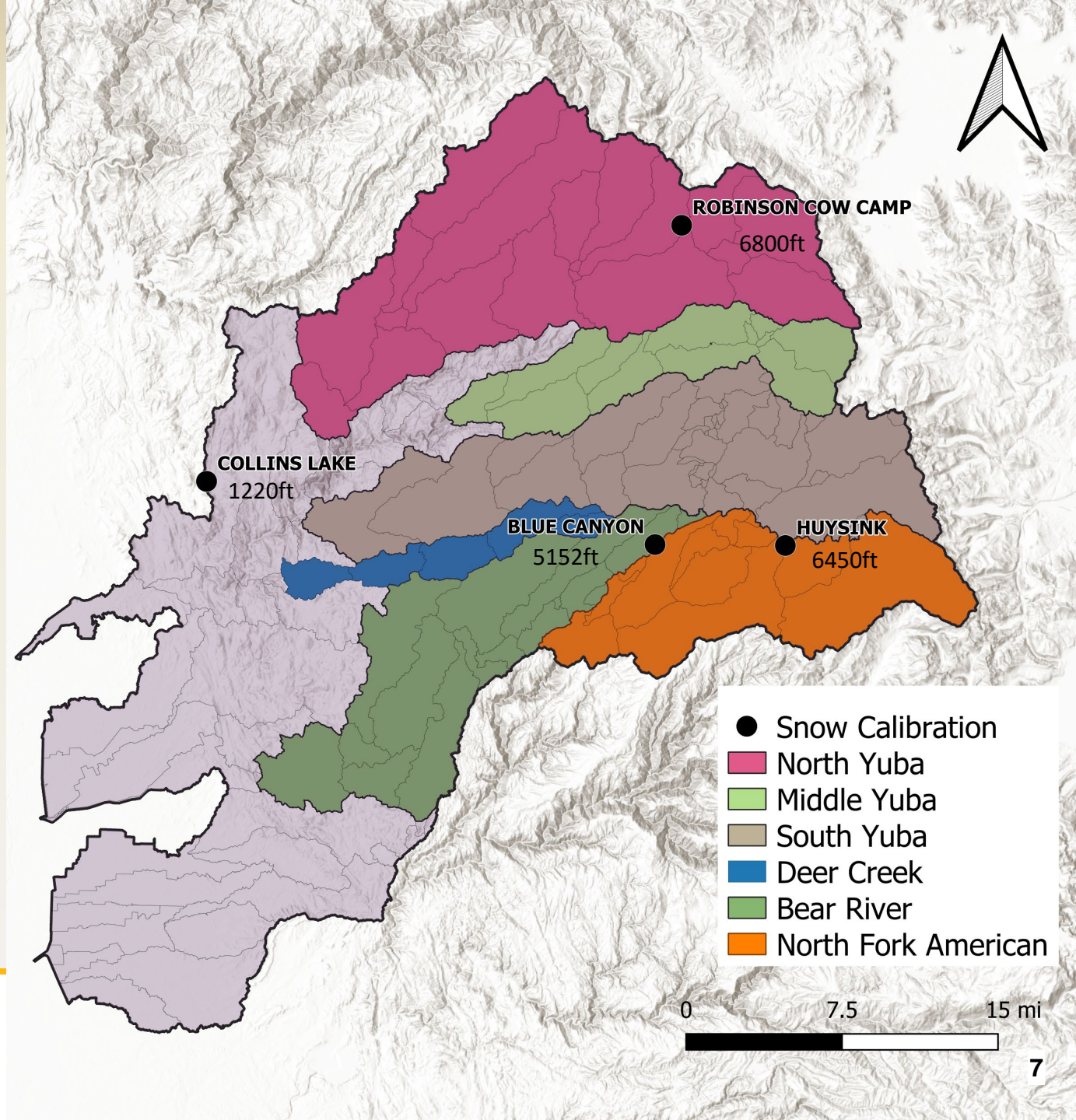
HMS Development

- NID Area
- 10-m Resolution Elevation
- HUC Basins
- Key Locations:
 - Reservoirs
 - ResSim Inflow
 - Gauges
 - USGS
 - NID Area
 - Expanded Area

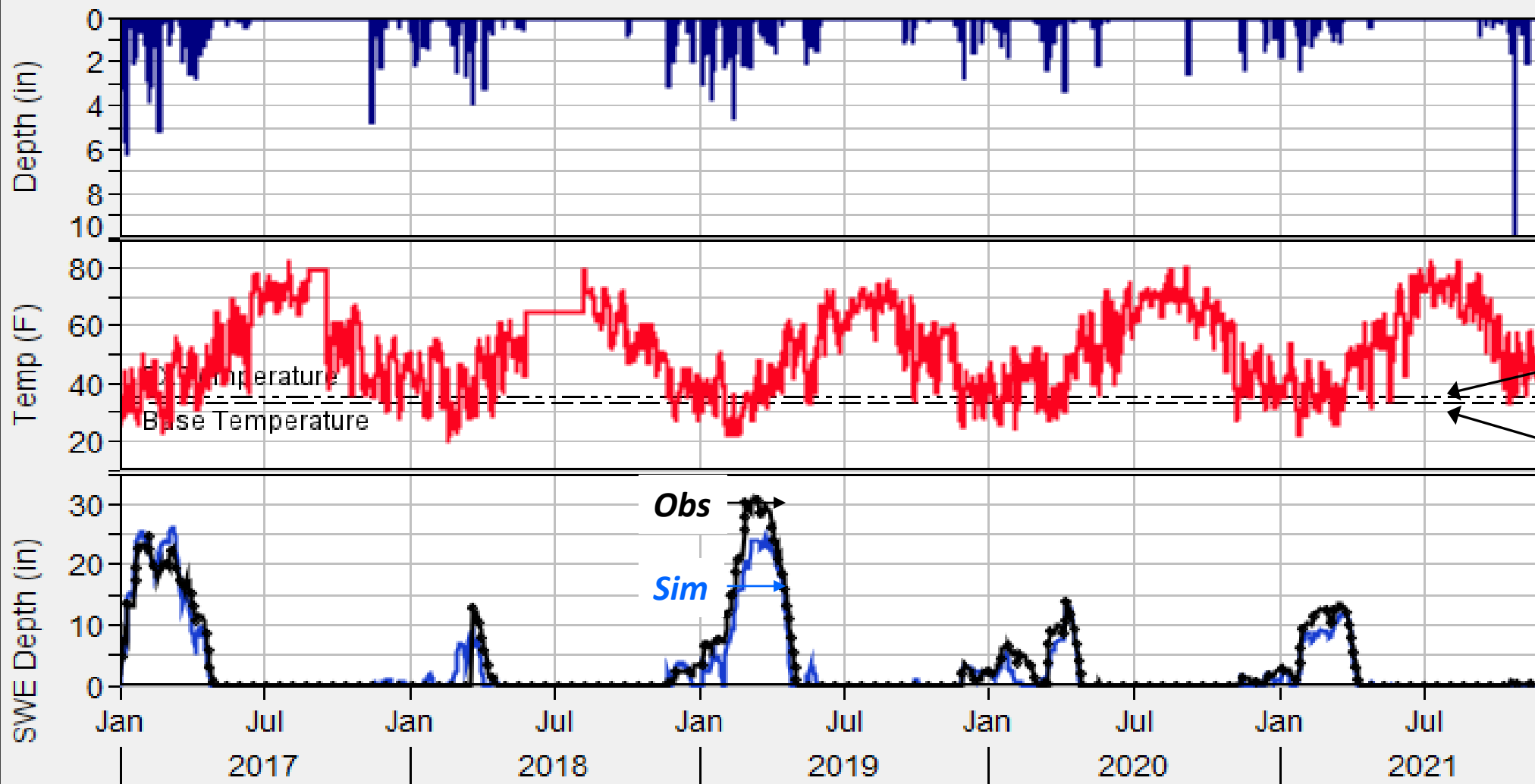


Snowmelt Calibration

- SNOTEL Stations
- Precip, Temp, and SWE
- Jan 2017 - Dec 2021



Subbasin Snowmelt "BLC" Results for Run "Calibration"



PX Temp
Base Temp

- Legend (Compute Time: DATA CHANGED, RECOMPUTE)
- Run:Calibration Element:BLC Result:Precipitation
 - Run:Calibration Element:BLC Result:Air Temperature
 - Run:Calibration Element:BLC Result:Snow Water Equivalent
 - Run:Calibration Element:BLC Result:Observed SWE

Ongoing HEC-HMS Calibration

Wet Water-Year	Normal Water-Year	Dry Water-Year
Oct 1996 - Sep 1997	Oct 2003 - Sep 2004	Oct 2020 - Sep 2021
Oct 2005 - Sep 2006		Oct 2014 - Sep 2015

Calibration

Middle Yuba: Our House Dam (Out=In)

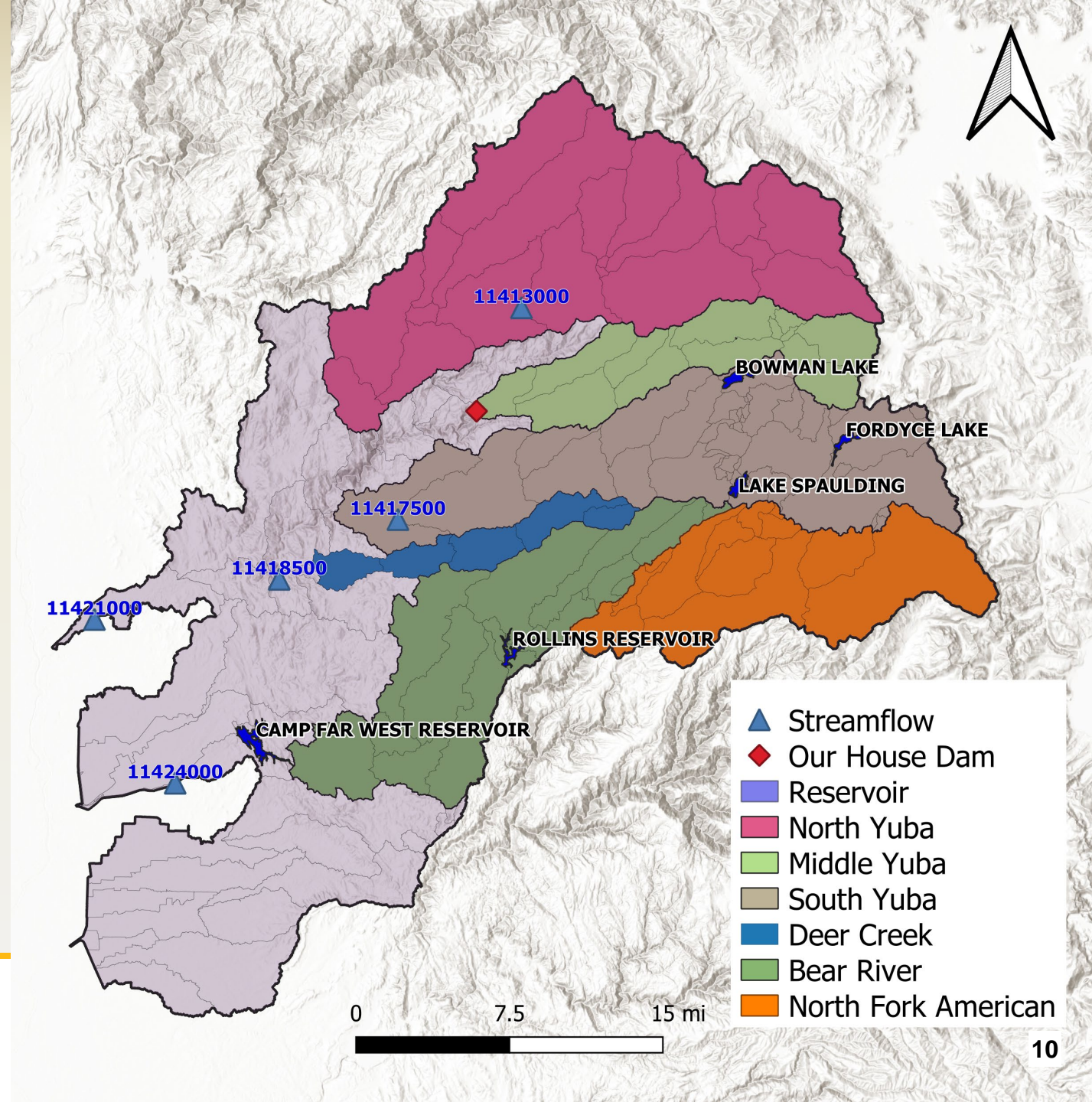
South Yuba: Bowman Lake, Lake Spaulding, Fordyce, and 11417500

Deer Creek: 11418500

North Yuba: 11413000

Downstream Yuba: 11421000

Bear River: Rollins Reservoir, Camp Far West, and W11424000





Next Steps

- Complete Calibration
- Perform Climate Change Analysis
- Provide Local Inflows to HEC-ResSim

Next Meeting:

Global Climate Projections and Unimpaired Hydrology