Supplementary

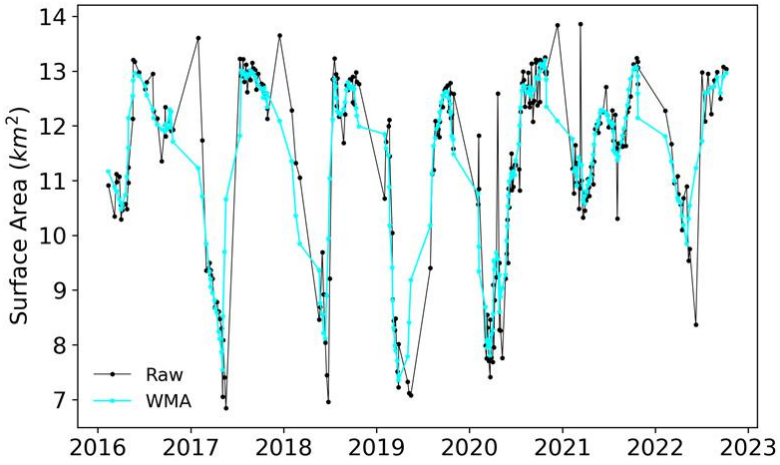


Figure S1. Time series of reservoir surface area before ('Raw') and after applying weighted moving average 'WMA')

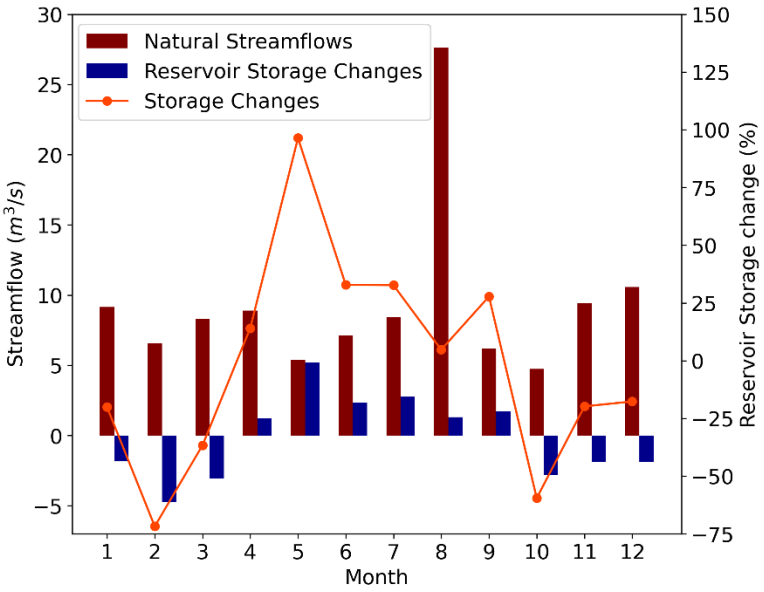


Figure S2: Median monthly 'Natural' Streamflows ($Q_{GESS-corrected}$), Reservoir Storage Changes, and Percentage of Reservoir Storage Changes.

Equation S1: Linear interpolation for filling days without surface area estimations from remote sensing imagery

$$y = y_1 + \frac{(x - x_1) \times (y_2 - y_1)}{x_2 - x_1}$$

where:

x_1, x_2: the dates have observations.

y_1, y_2: the surface area values on those dates.

x: a date without direct observation.

y: the interpolated surface area for the date x.

Equation S2: Linear interpolation equation for determining elevation/storage using surface area estimations from remote sensing imagery and AEV curves.

$$y = y_1 + \frac{(x - x_1) \times (y_2 - y_1)}{x_2 - x_1}$$

where:

x_1, x_2 are the surface area values of AEV curves before and after the target area (x) estimated from remote sensing imagery.

y_1, y_2 are the associated elevations/storages values corresponding to x_1, x_2 of AEV curves.

x is estimated surface area extents using remote sensing imagery.

y is the interpolated reservoir elevations/storages corresponding to x.