

Update to Lake Elsinore and Canyon Lake Nutrient TMDL Task Force

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Summary of Lake Modeling Workshops

- Workshop #1: March 18
 - Review ground rules
 - Discussion peer review that motivated supplemental modeling
 - Review proposed supplemental scenarios and objectives

Migration review

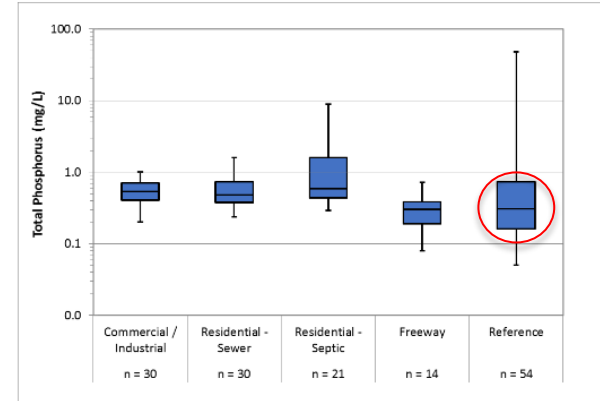
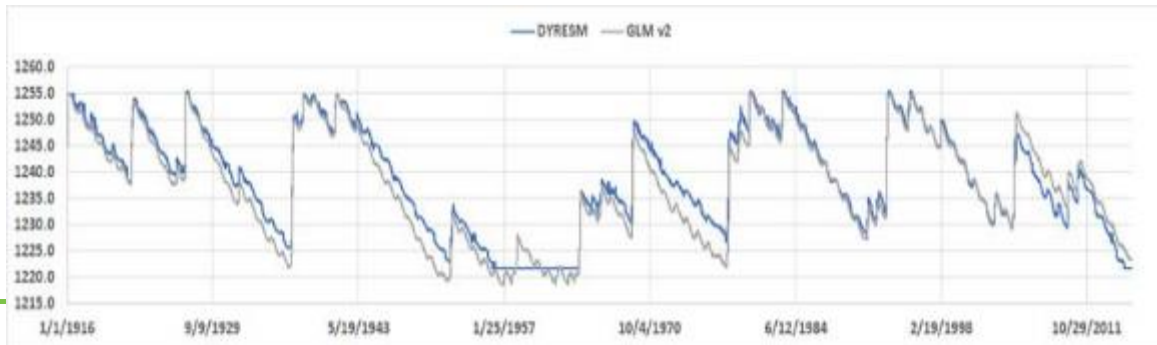


Figure 4-17. Box/Whisker Plots of Wet Weather Total Phosphorus from Land Use-specific Sites

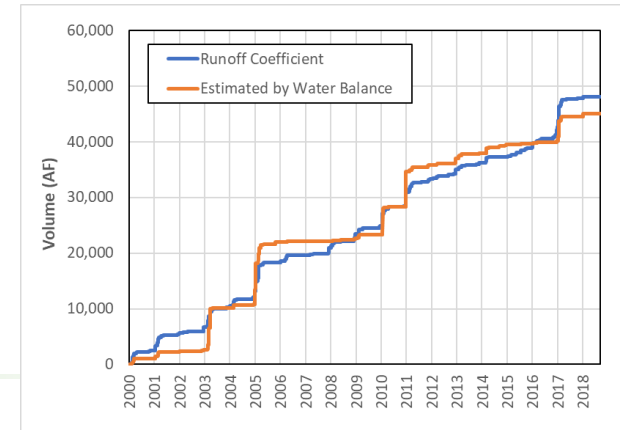


Figure 3-5. Comparison of Current Lake Elsinore Hydrography with Approximate Pre-LEMP Hydrography (shapefile from NHD)

Summary of Lake Modeling Workshops

- Workshop #2: March 26
 - Extending GLM through 2020
 - Lake Elsinore hydrologic inputs modified approach
 - Higher rate of evaporative/other loss following 2017 storm
 - Reference water levels 1916-2015 and 2017 – 2021

Lakebed desiccation in 2015 and return following 2017 storms



Summary of Lake Modeling Workshops

- Workshop #3: April 6
 - Issues with AEM3D hot start files
 - Consensus on perturbation for sensitivity analyses (10% for flux parameter, 30% for hydrology)
 - Discussion of adjustment of sediment nutrient flux parameter to account for alternative reference nutrient concentrations
 - GLM, AEM3D account for DO, temperature, but not changing external loads

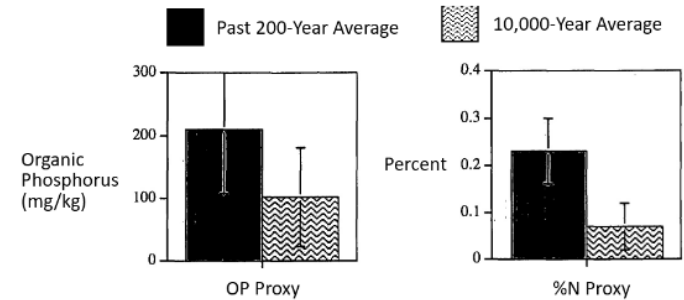
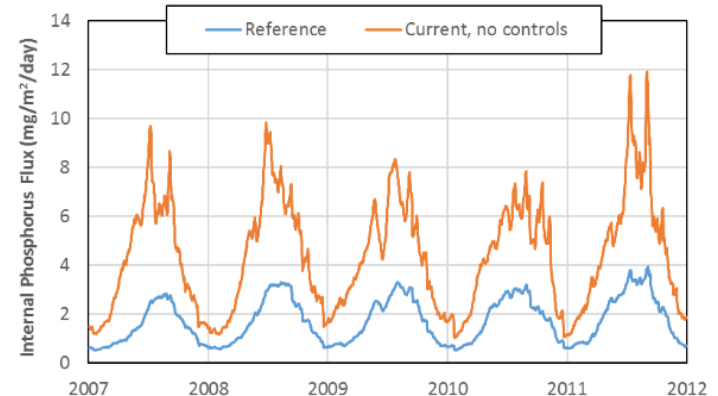


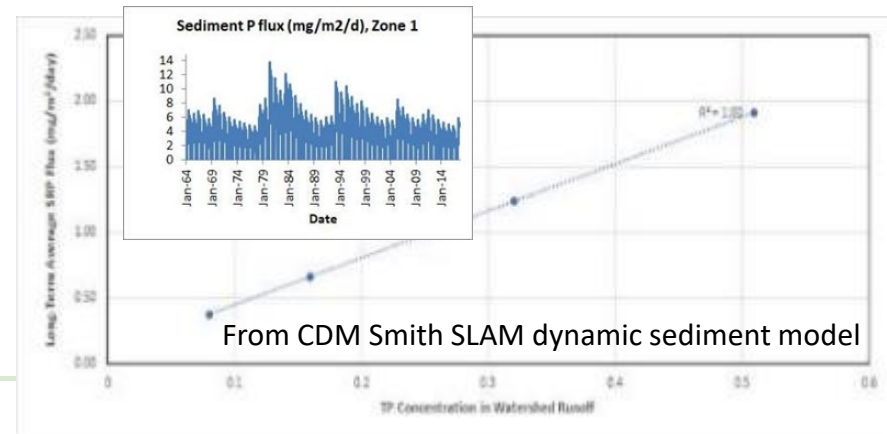
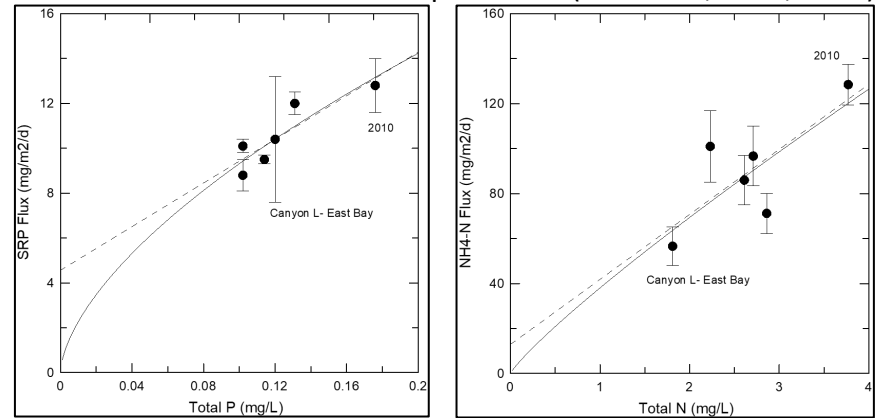
Figure 4-24. Paleolimnology Indicators of Nutrient Enrichment in Lake Elsinore Bottom Sediment Comparing Modern Era (dark grey) to Pre-Historic Era (hatch) Deposits



Summary of Lake Modeling Workshops

- Workshop #4: April 14
 - Multiple lines of evidence to support linear downward extrapolation for internal flux parameter in alternative reference condition
 - Consensus on extrapolation
 - Discussion on the importance of physical resuspension during periods of low lake level

Summer season core flux experiments (Anderson, 2001, 2010)



Summary of Lake Modeling Workshops

- Upcoming Workshop #5: May 4
 - Discuss results for all supplemental scenarios in Lake Elsinore

Parameter	Existing Conditions (Updated SJR Inflow Nutrients to Dec 2020)	Scenario 1b: Reference Conditions	Scenario 2: Alternative Reference Condition	Scenario 3 Flux Parameter Sensitivity	Scenario 4 Hydrologic Sensitivity
Hypsography	With levee	Without levee	With levee	With levee	With levee
Inflow TP (mg/L) in Runoff	0.39	0.32 (82% of existing)	0.16 (41% of existing)	0.16	0.16
Inflow TN (mg/L) in Runoff	1.64	0.92 (56% of existing)	0.68 (41% of existing)	0.68	0.68
Internal TP Flux (mg/m ² /day)	9.0	7.4 (82% of existing)	3.7 (41% of existing)	4.1 (+10% of Sc2)	3.7
Internal TN Flux (mg/m ² /day)	75.0	42.1 (56% of existing)	31.1 (41% of existing)	34.2 (+10% of Sc2)	31.1
EVMWD discharge	Metered Inflow	None	None	None	None
Runoff Flow	USGS gauge + local runoff estimate (1916 - 2016)				70% of USGS gauge + local runoff

Summary of Lake Modeling Workshops

- Upcoming Workshop #6: Not yet scheduled
 - Discuss results for all supplemental scenarios in Canyon Lake
 - Updated Lake Elsinore results based on any changes made as a result of Workshop #5
 - Set a clear path to adoption of revised TMDL