

September 1, 2026: Conditional Position Analysis (CPA) Implementation – LOSOM

Water Resources & Systems Modeling Bureau, Systems Modeling Unit
SFWMD

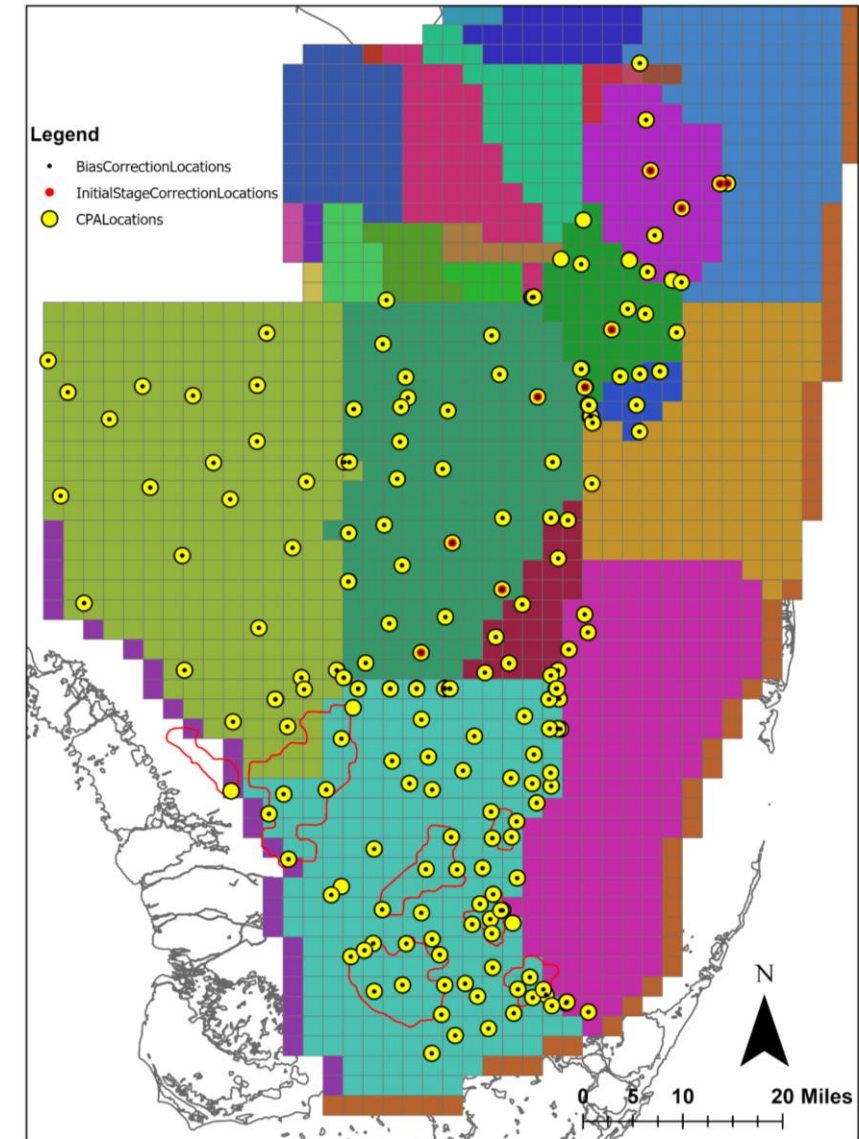


CPA Overview



- CPA is a stochastic framework ([CPA Overview](#)) that transforms stages obtained from Dynamic Position Analysis (DPA) based on forecasted rainfall conditions over the next twelve months (Ali, 2016).
- CPA depends on DPA - DPA stage outputs are used as inputs to CPA ([DPA](#)). DPA uses a physically based model (SFWMM) to forecast stages from the currently observed stages using 52-years of historical rainfall.
- 3 rainfall outlook scenarios (climatological, CPC, and Preferred Scenario) are used to compare potential stage outlooks.
- CPA is implemented for 200+ locations in the greater Everglades including Lake Okeechobee and Lake Istokpoga*. Additionally, CPA is implemented for WCA1Avg (avg of Site 7, Site 8T, and Site 9) and WCA3AAvg (avg of Site 63, Site 64, and Site 65) stages (Khare et al., 2024) in the Everglades.

Conditional Position Analysis (CPA) Gage Locations



*see details on slide 16

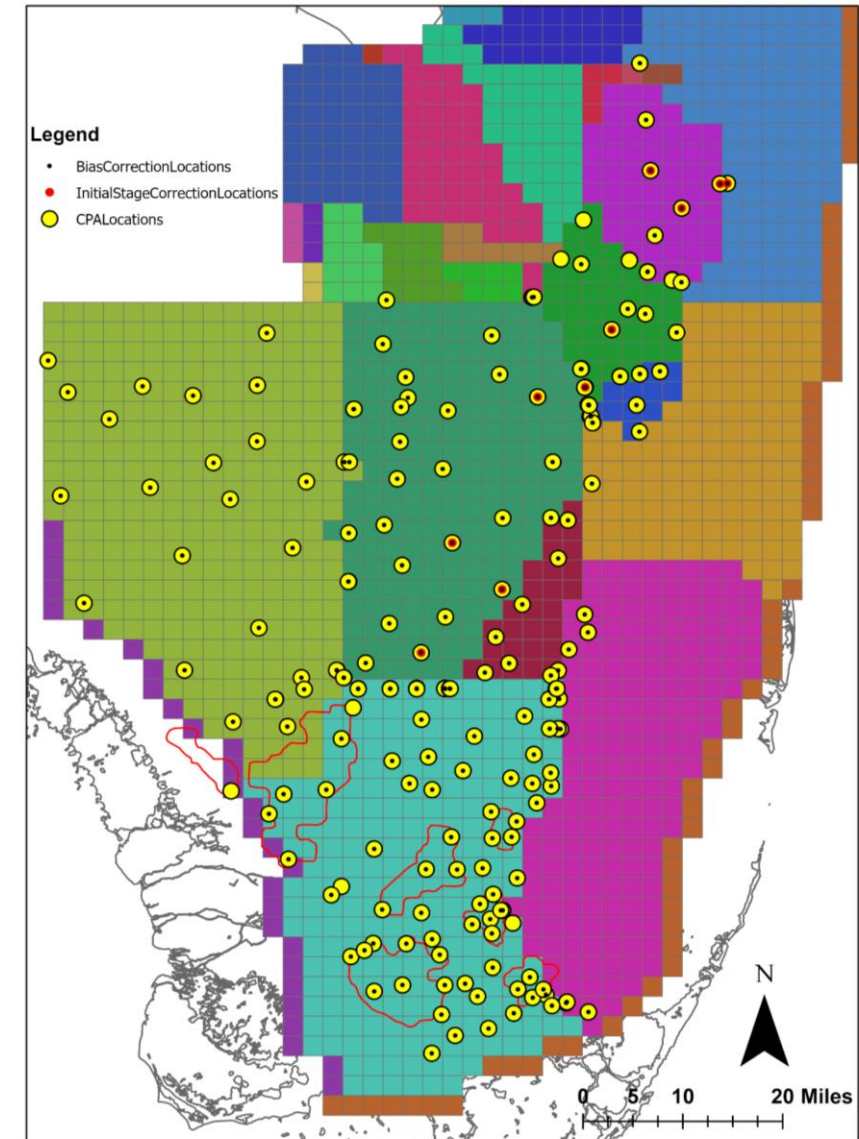
CPA Overview



➤ CPA Outputs

- CPA forecasted stage percentiles from 'Climatologic' scenario are first collapsed on DPA stage percentiles. Corresponding adjustments are then applied to stage percentile lines for all other rainfall scenarios.

Conditional Position Analysis (CPA) Gage Locations





CPA: Rainfall Scenarios for September 1, 2026



➤ Climatologic

- Climatologic scenario assumes equal chances of below-normal/dry, normal, and above-normal/wet rainfall conditions over next twelve 3 monthly seasons (slide 5).
- This scenario is the connecting link between DPA and all other scenarios simulated under CPA.

➤ CPC

- This is based on official rainfall forecasts published by NOAA's Climate Prediction Center (CPC) every month ([Climate Prediction Center - Forecasts & Outlook Maps, Graphs and tables \(noaa.gov\)](https://climatepredictioncenter.noaa.gov/forecasts/)).
- The September 1, 2026, CPC rainfall scenario reflects the latest rainfall outlook released by CPC.
- It is also used by JEM's EverForecast tool for stage prediction.

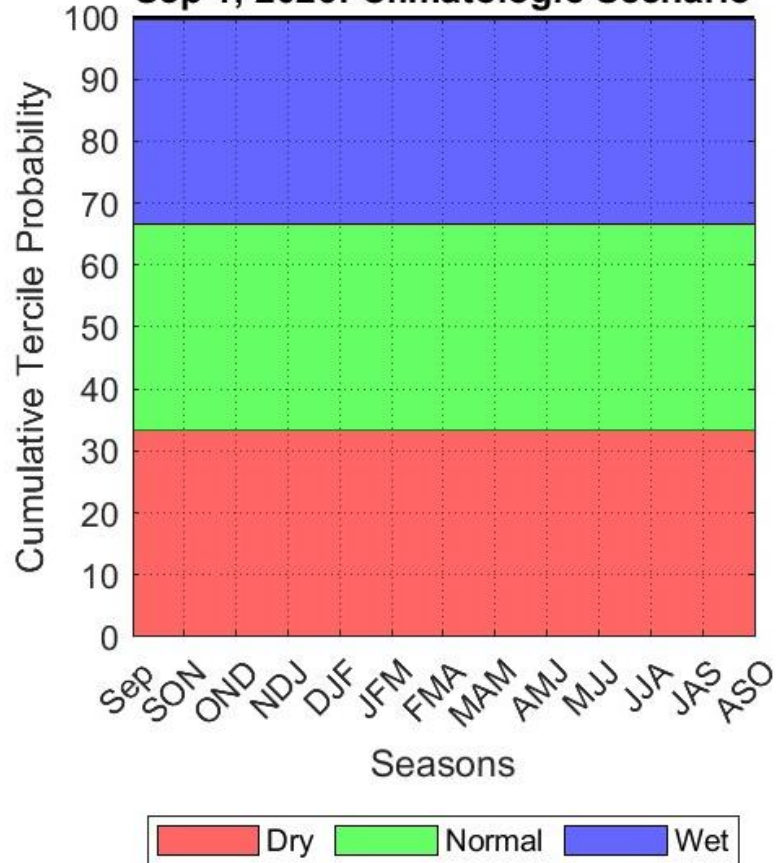
➤ Preferred Scenario (PrefSce)

- Seasonal rainfall probabilities are calculated based on historical data and projected [Relative Oceanic Nino-3.4 Index \(RONI\)](#) published by the CPC.
- This scenario developed by the Systems Modeling Unit ([PrefSce Overview](#)) represents a best professional judgement rainfall outlook.
- September 1, 2026, PrefSce rainfall scenario includes latest release of seasonal rainfall outlook from [NOAA](#).
- Seasonal tercile probabilities of the first season are estimated from QPF produced by WMD, WPC, ECMWF HRES, and 100 ECMWF ensembles, in combination with historical rainfall data during 1991–2020.
- The first month's tercile probabilities are also derived from the QPF estimates generated using the same method described above.

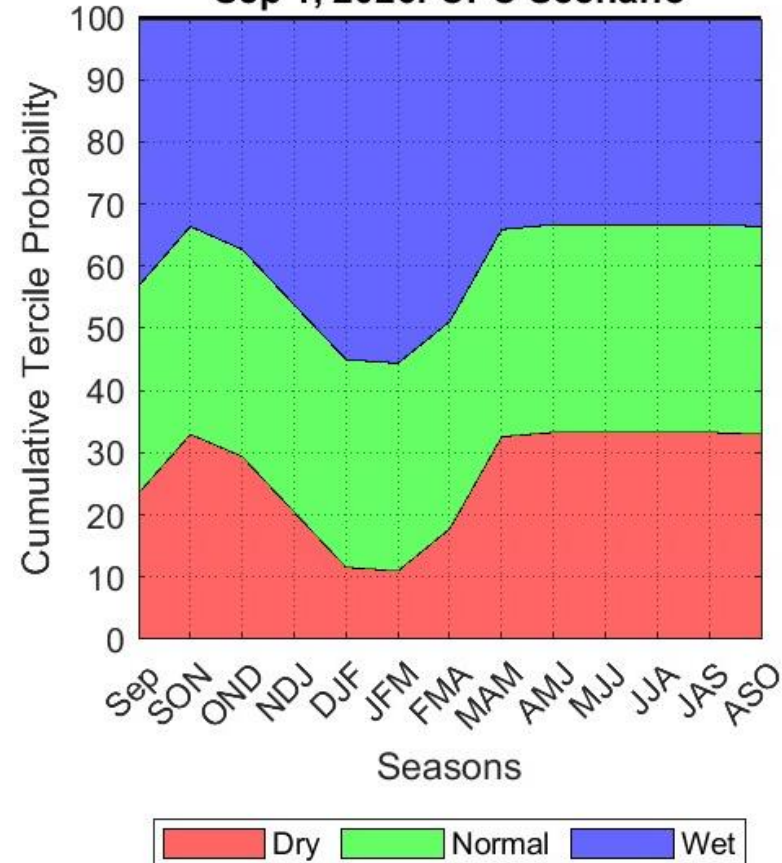
September 1, 2026 CPA: Rainfall Scenarios



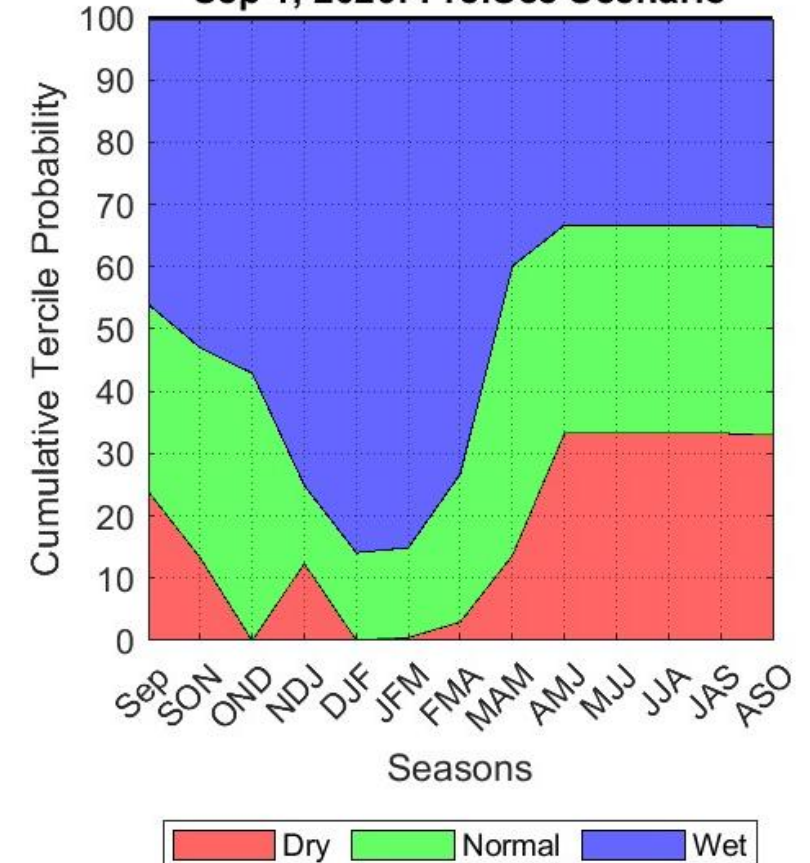
Sep 1, 2026: Climatologic Scenario



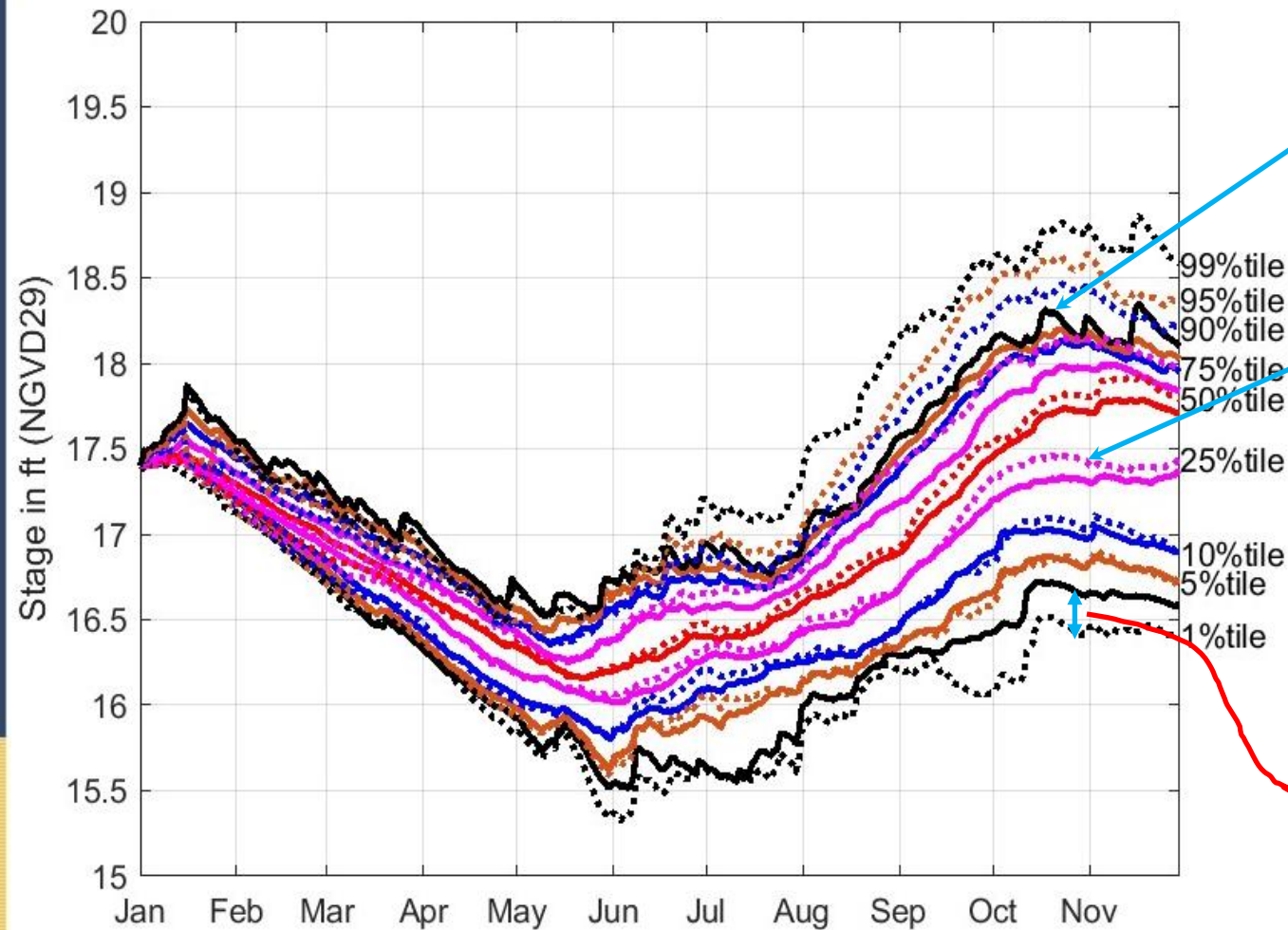
Sep 1, 2026: CPC Scenario



Sep 1, 2026: PrefSce Scenario



CPA: Key to Reading Results



Solid lines → Climatological Scenario/DPA

Dotted lines → Alternative Rainfall Scenario

Black lines → 1% and 99%
Brown lines → 5% and 95%
Blue lines → 10% and 90%
Pink lines → 25% and 75%
Red lines → 50%

**Need to focus on how
DPA percentile lines
shift under Alternate
Rainfall Scenario**

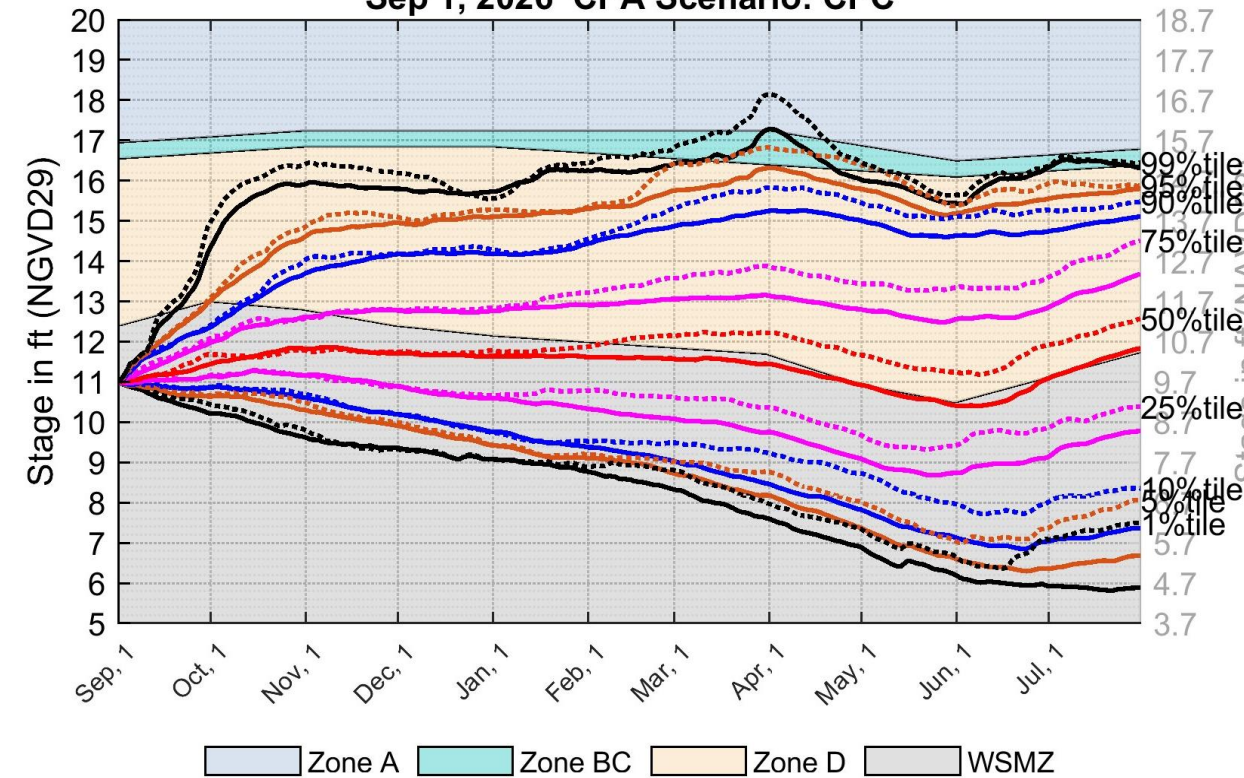


LOSOM

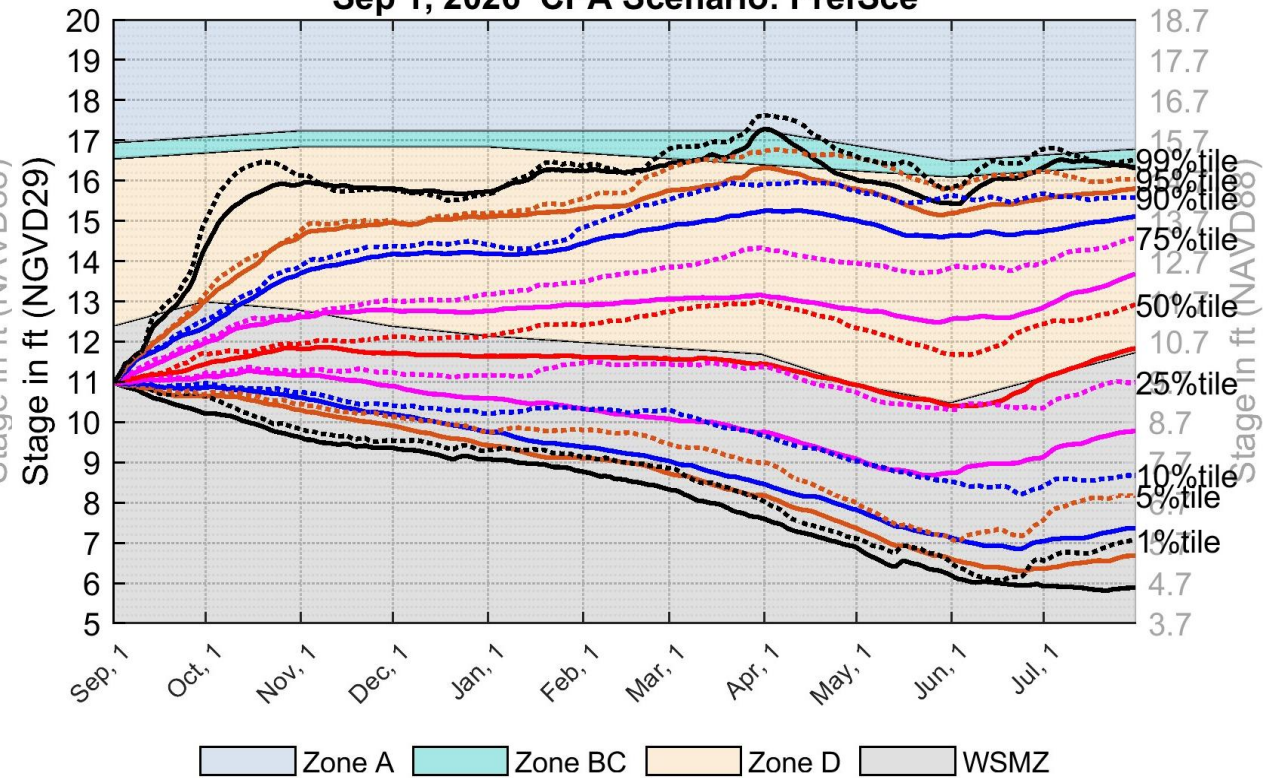
September 1, 2026 CPA: Lake Okeechobee

CPC
LOK

Sep 1, 2026 CPA Scenario: CPC

PrefSce
LOK

Sep 1, 2026 CPA Scenario: PrefSce



Secondary vertical axis shows stages in NAVD88. These stages are based on agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.30 ft for Lake Okeechobee).

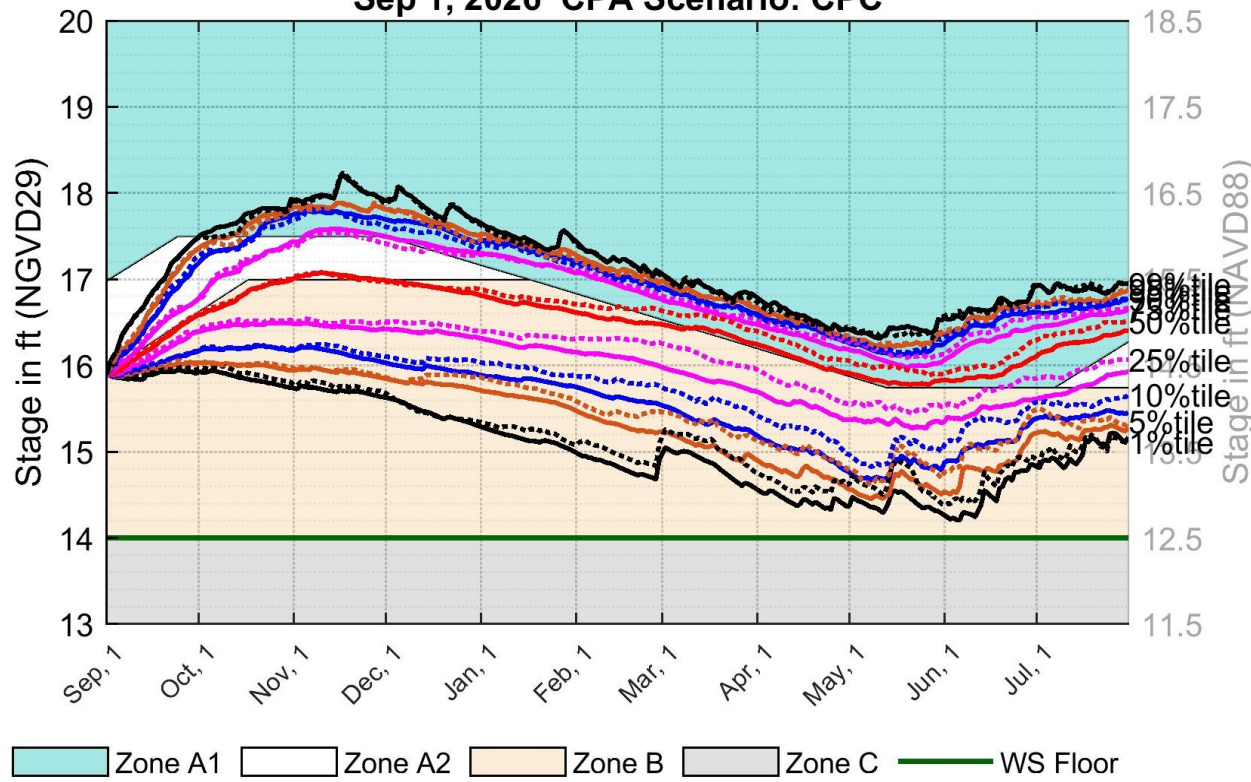
September 1, 2026 CPA: WCA-1 3-Gage Avg.



CPC

WCA-1 3-Gage Avg.

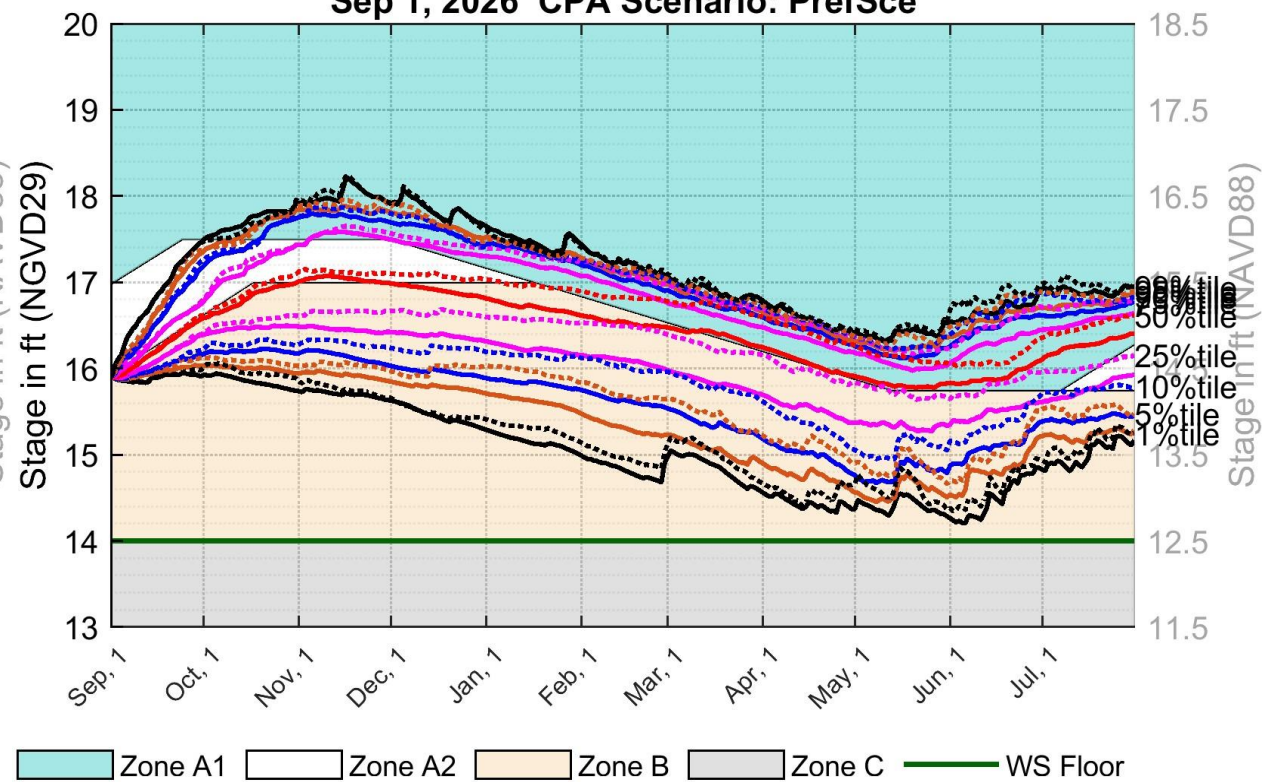
Sep 1, 2026 CPA Scenario: CPC



PrefSce

WCA-1 3-Gage Avg.

Sep 1, 2026 CPA Scenario: PrefSce



Secondary vertical axis shows stages in NAVD88. These stages are based on agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.5 ft for WCA-1).

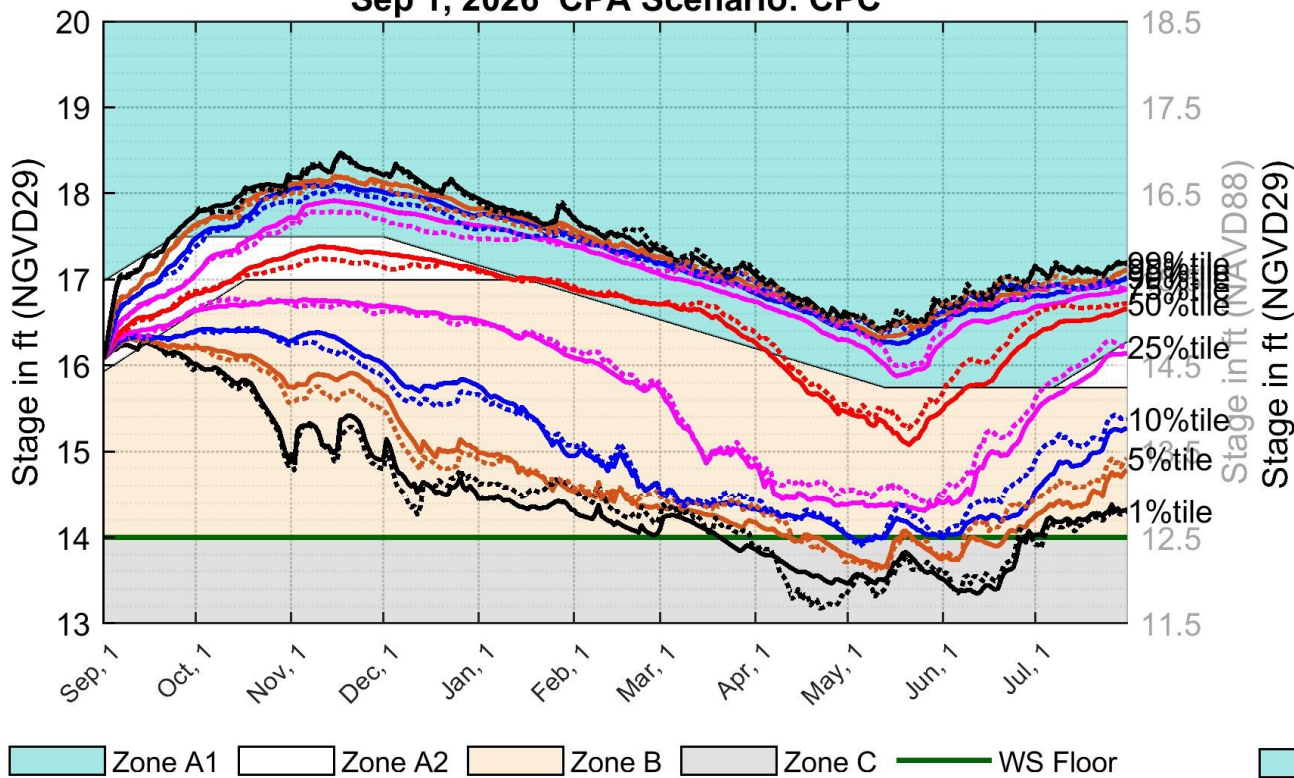
September 1, 2026 CPA: WCA-1 Site-8C



CPC

WCA-1 Site-8C

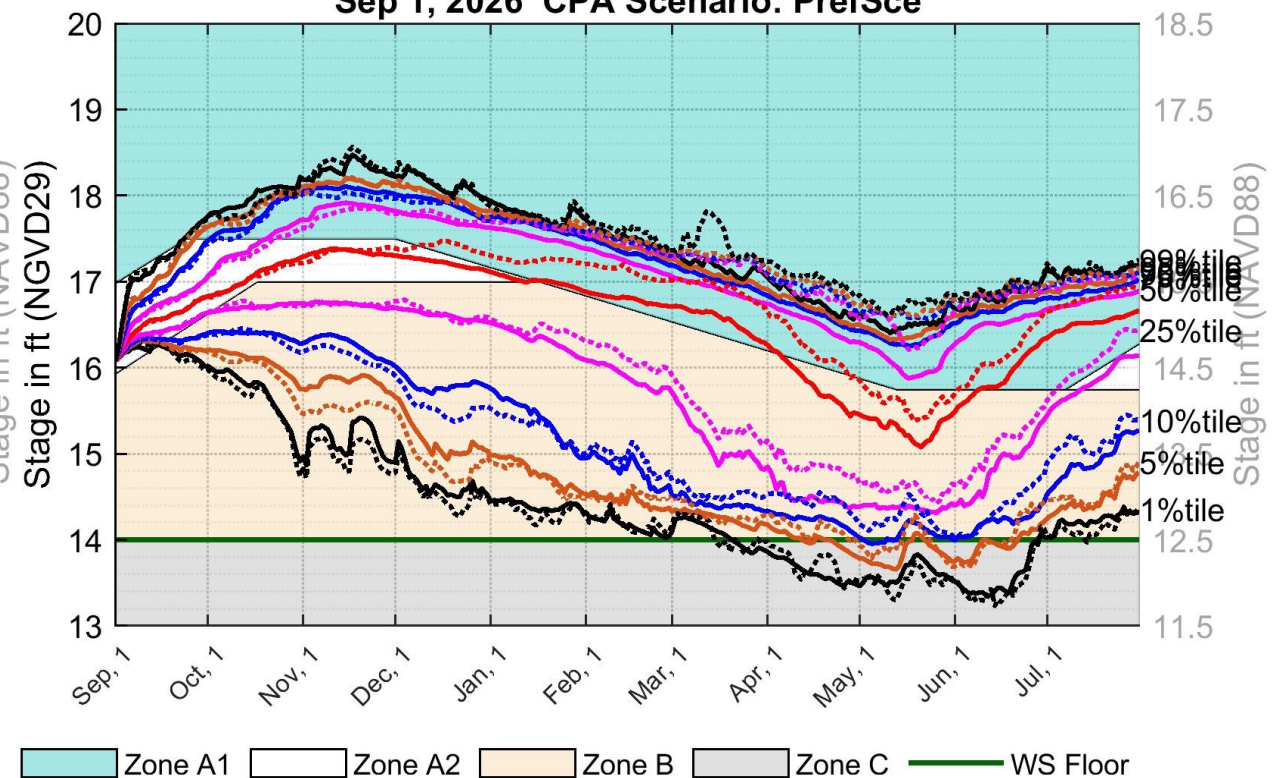
Sep 1, 2026 CPA Scenario: CPC



PrefSce

WCA-1 Site-8C

Sep 1, 2026 CPA Scenario: PrefSce



Secondary vertical axis shows stages in NAVD88. These stages are based on agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.5 ft for WCA-1).

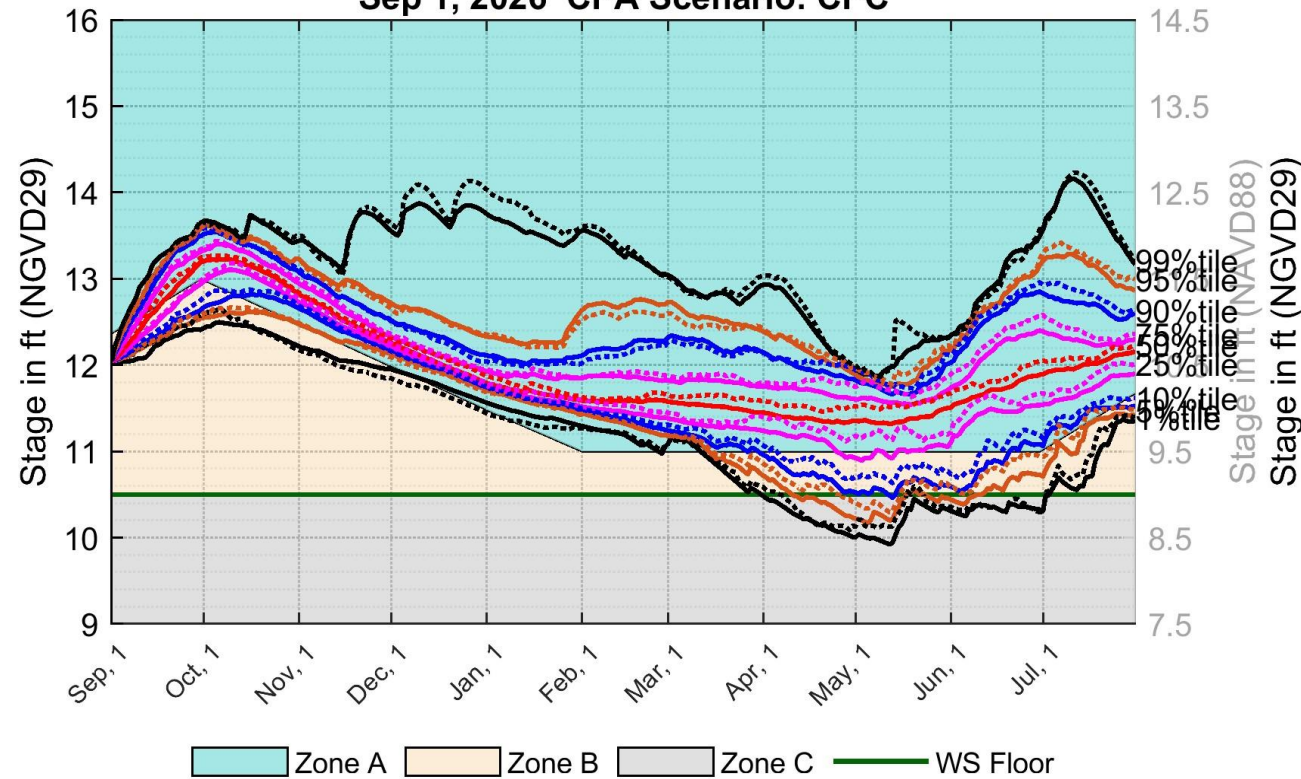
September 1, 2026 CPA: WCA-2A Site-17



CPC

WCA-2A Site-17

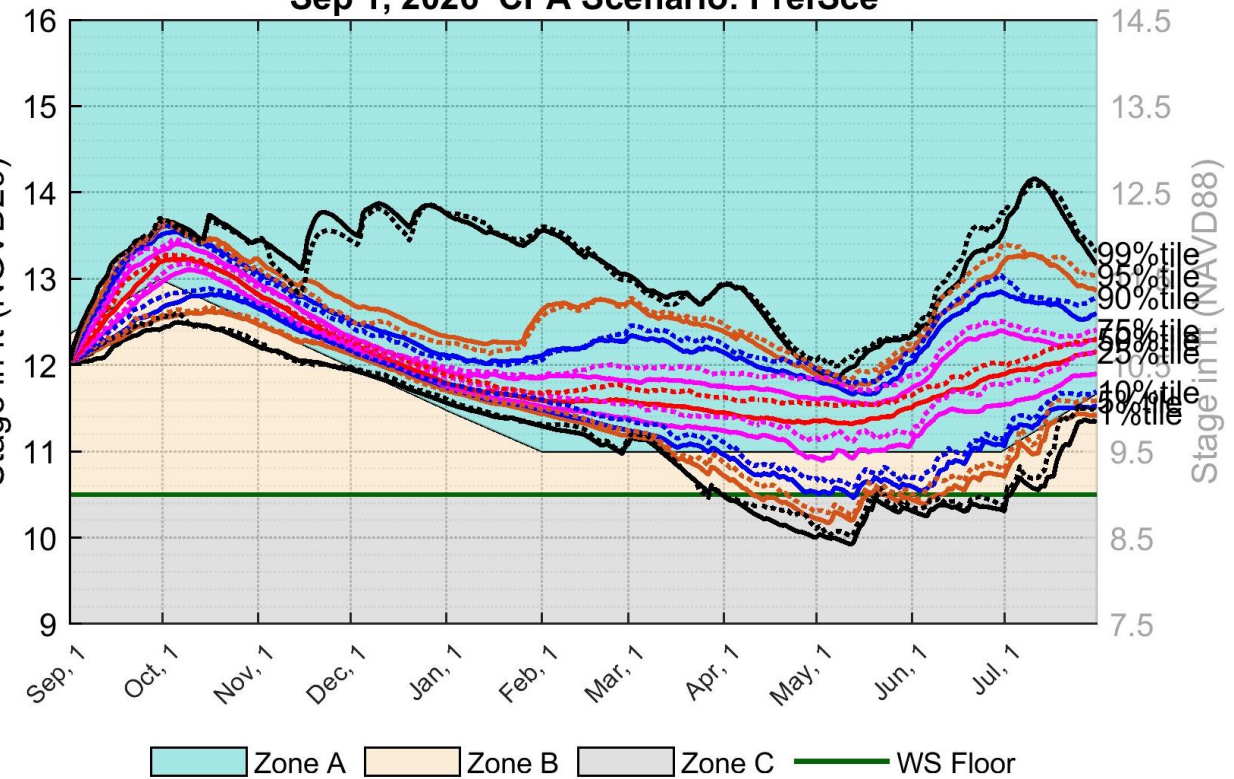
Sep 1, 2026 CPA Scenario: CPC



PrefSce

WCA-2A Site-17

Sep 1, 2026 CPA Scenario: PrefSce



Secondary vertical axis shows stages in NAVD88. These stages are based on agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.5 ft for WCA-2A).

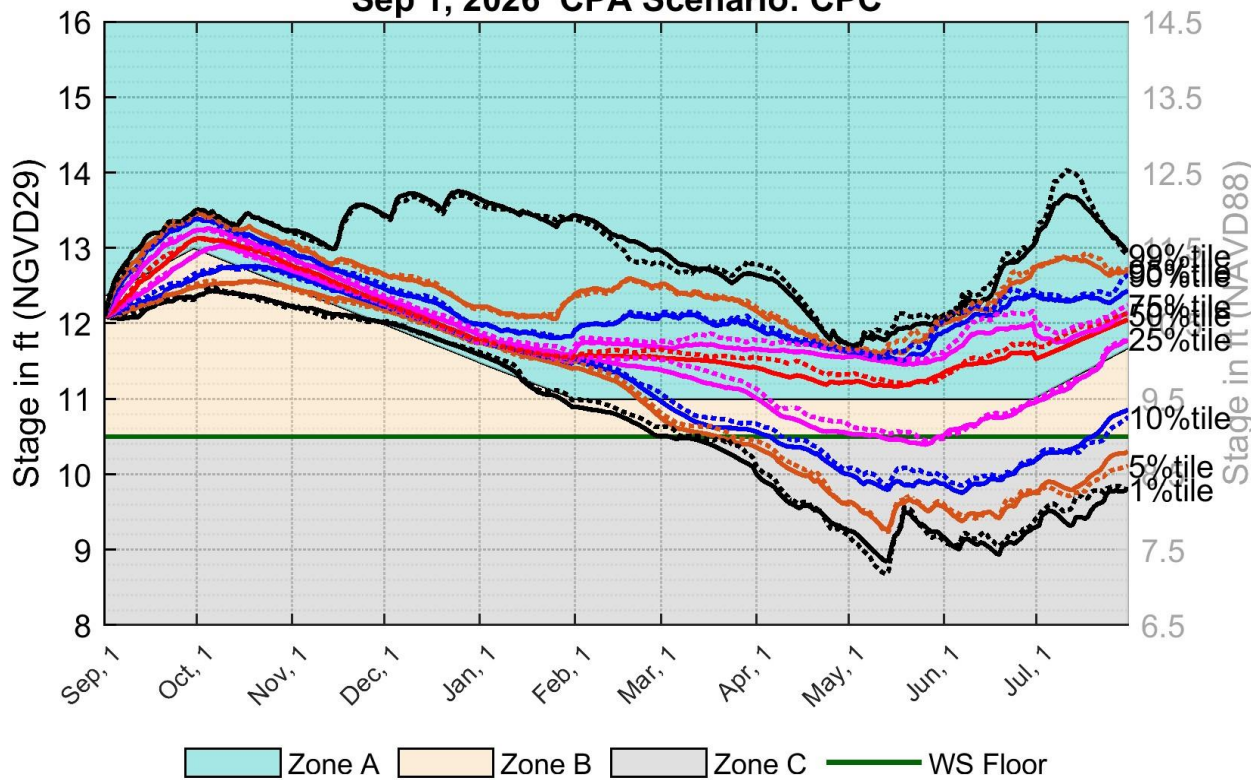
September 1, 2026 CPA: WCA-2A S-11B_H



CPC

WCA-2A S-11B_H

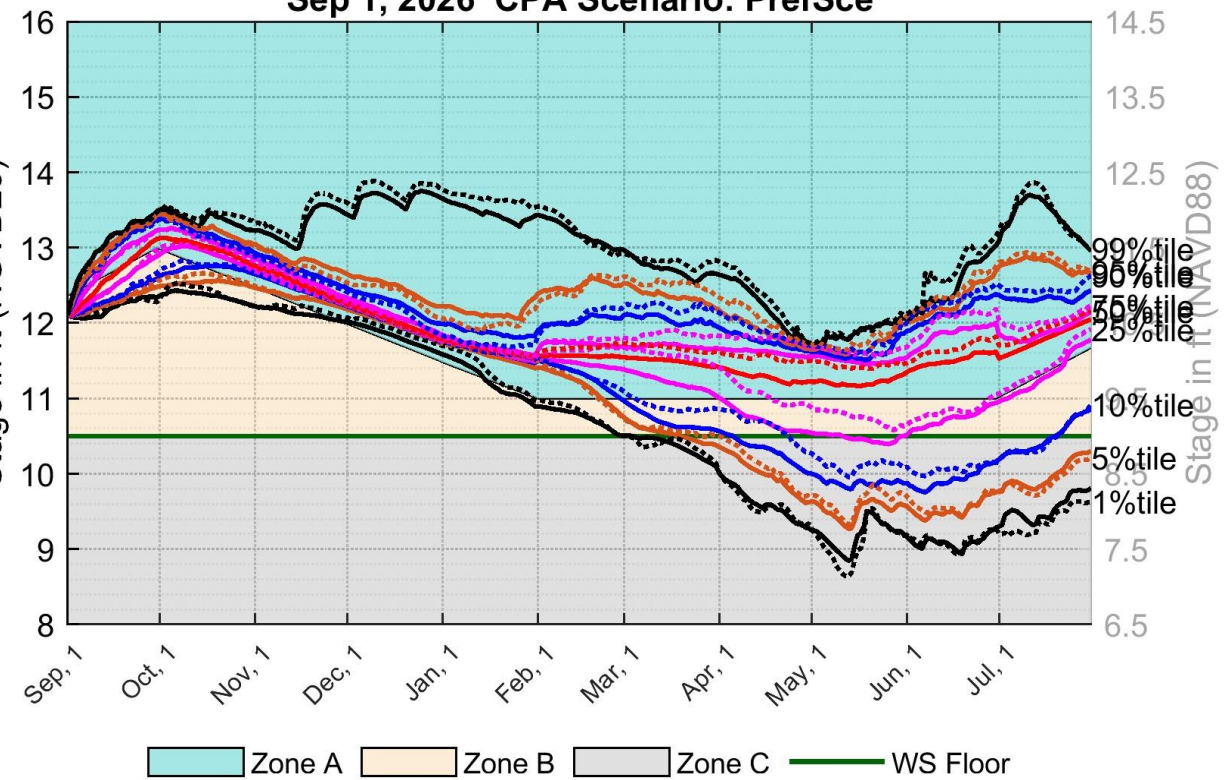
Sep 1, 2026 CPA Scenario: CPC



PrefSce

WCA-2A S-11B_H

Sep 1, 2026 CPA Scenario: PrefSce



Secondary vertical axis shows stages in NAVD88. These stages are based on agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.5 ft for WCA-2A).

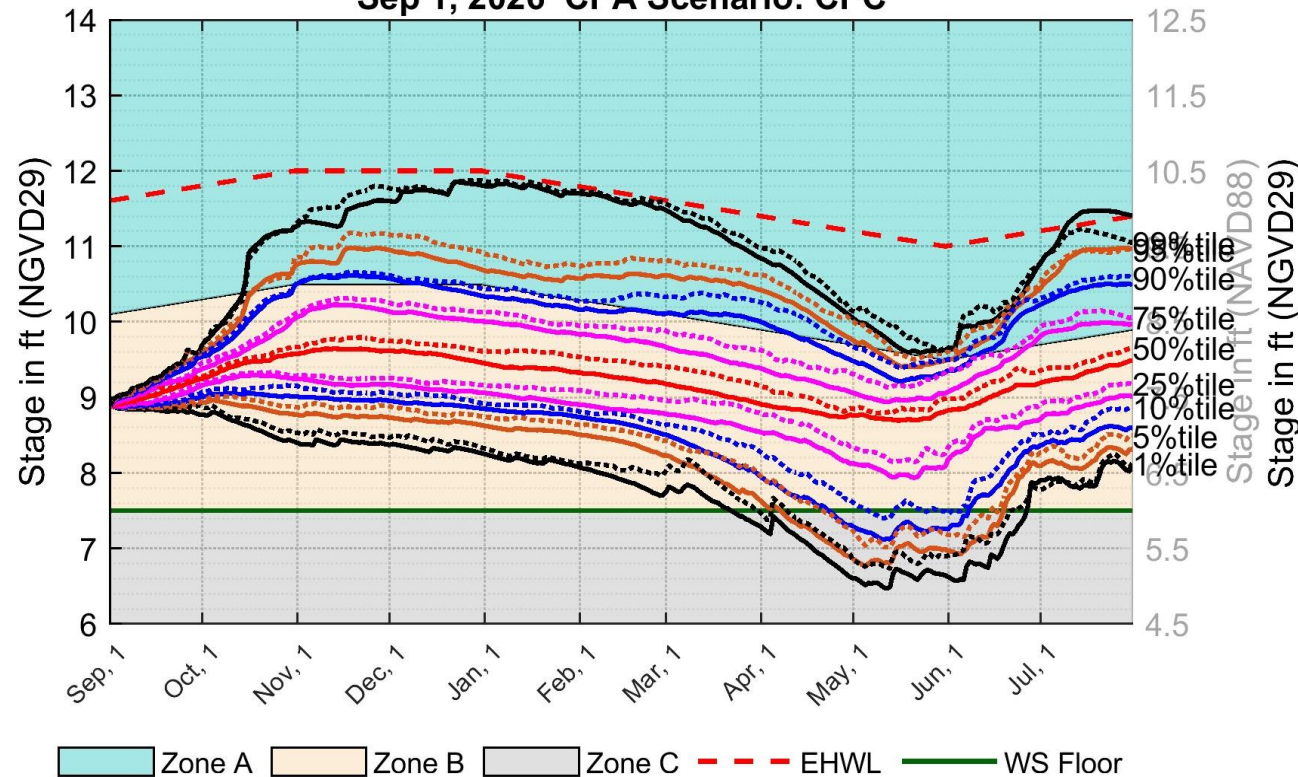
September 1, 2026 CPA: WCA-3A 3-Gage Avg.



CPC

WCA-3A 3-Gage Avg.

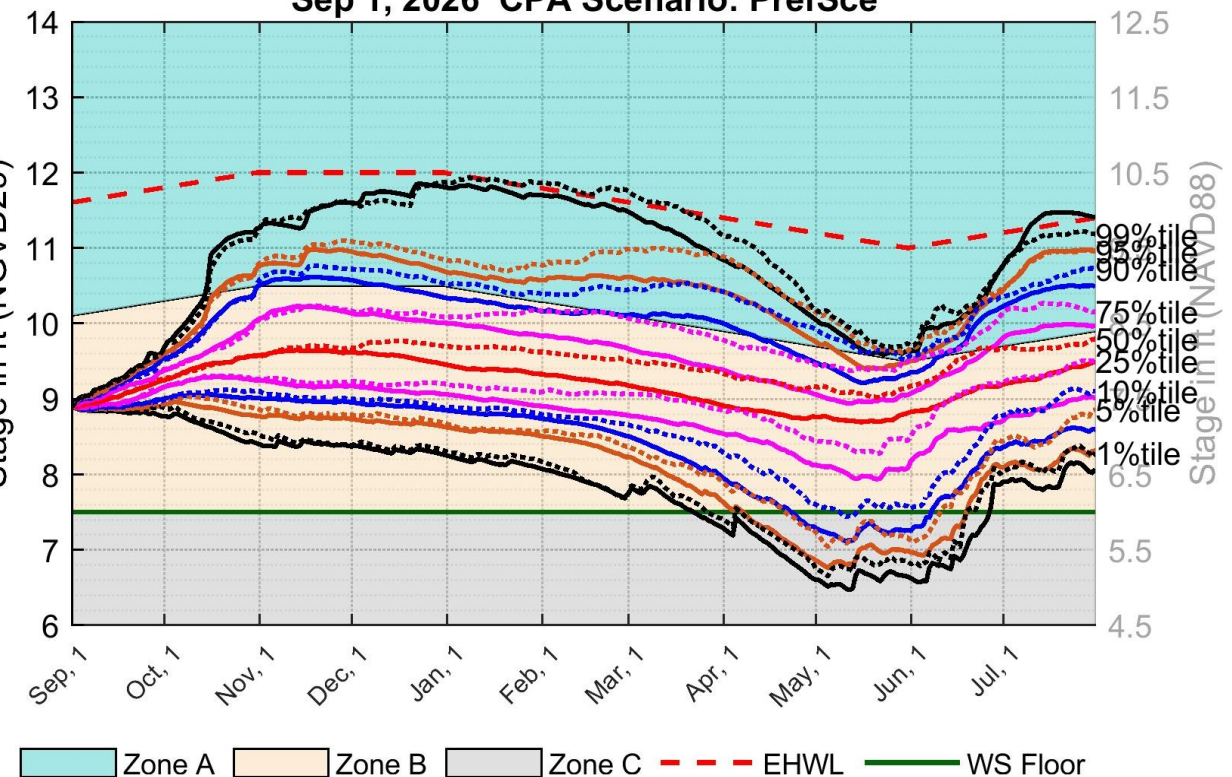
Sep 1, 2026 CPA Scenario: CPC



PrefSce

WCA-3A 3-Gage Avg.

Sep 1, 2026 CPA Scenario: PrefSce



Secondary vertical axis shows stages in NAVD88. These stages are based on agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.5 ft for WCA-3A).

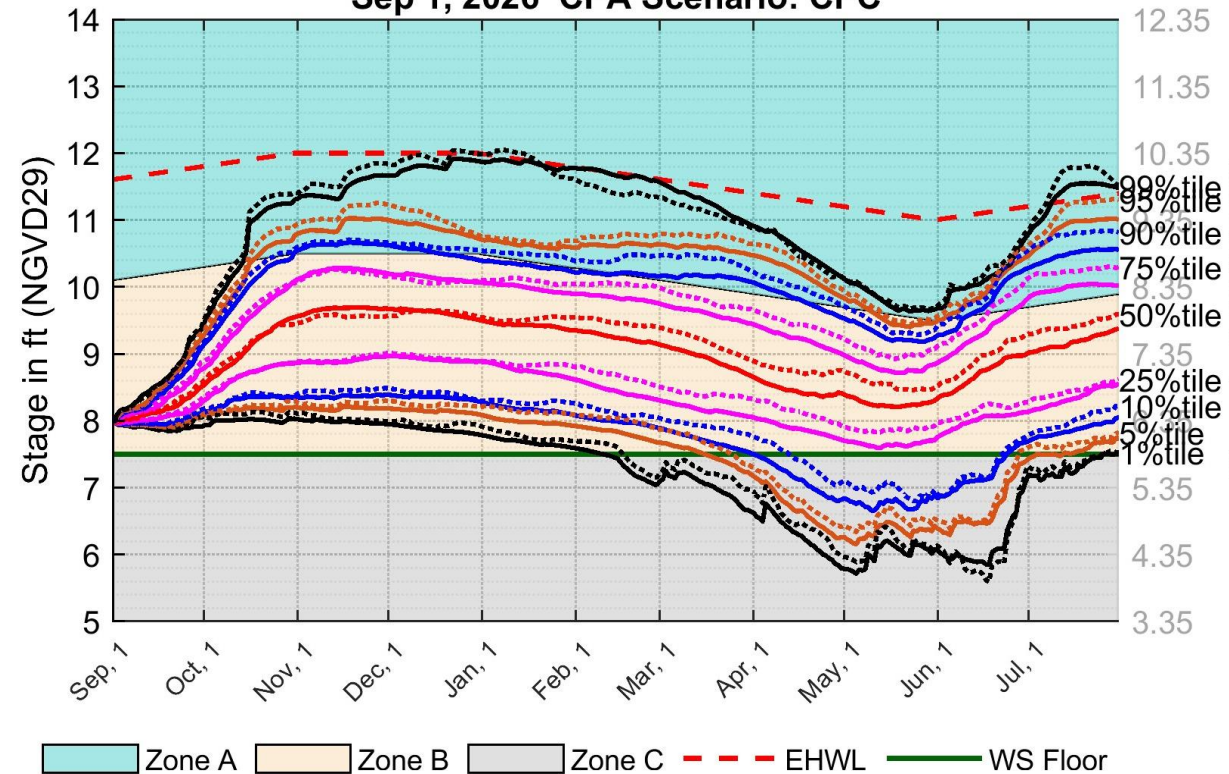
September 1, 2026 CPA: WCA-3A Site-69W



CPC

WCA-3A Site-69W

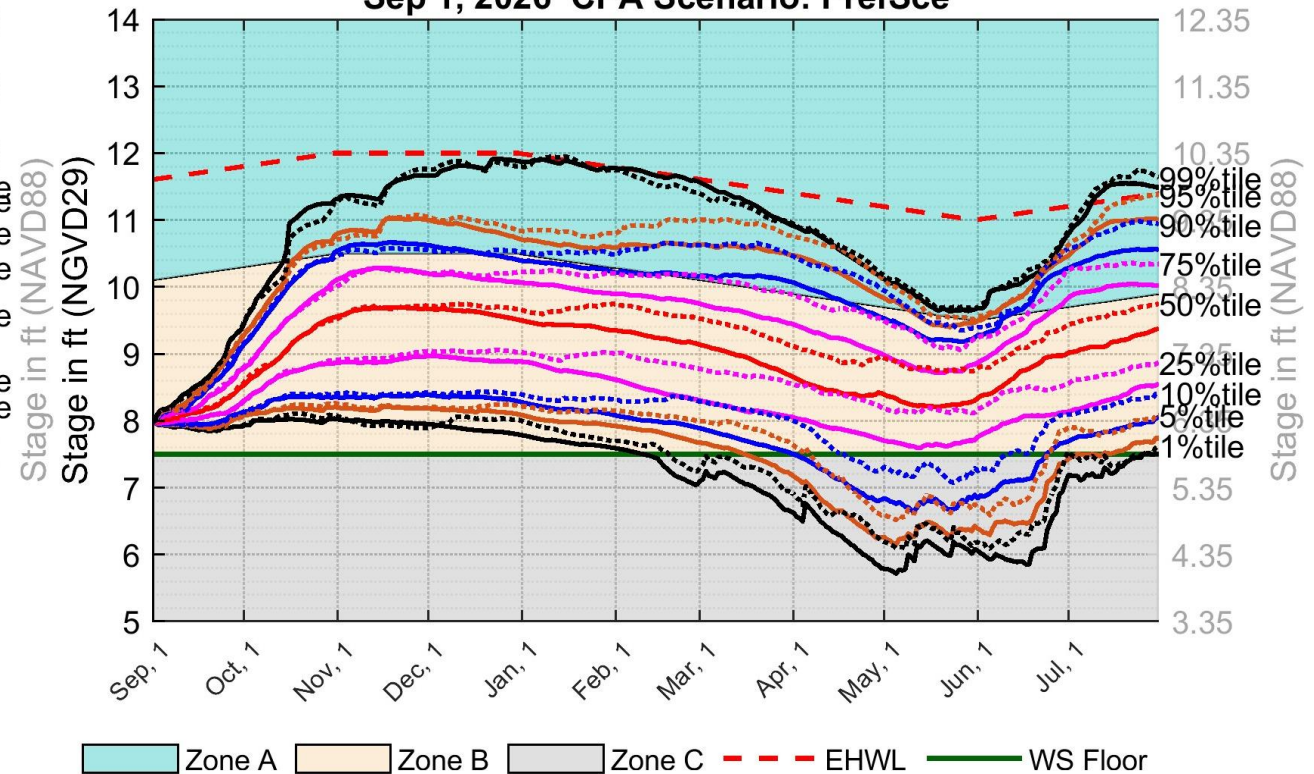
Sep 1, 2026 CPA Scenario: CPC



PrefSce

WCA-3A Site-69W

Sep 1, 2026 CPA Scenario: PrefSce



Secondary vertical axis shows stages in NAVD88. These stages are based on agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.65 ft for WCA-3A Site-69W).



SEPTEMBER 1, 2026: CPA IMPLEMENTATION LAKE ISTOKPOGA



Lake Istokpoga CPA Implementation Overview



- CPA is implemented for Lake Istokpoga using a daily mass-balance based Lake Istokpoga Position Analysis (PA) model for the following scenarios:
 - **Baseline Release Logic:** Release based on standard Lake Istokpoga Regulation Schedule (Zones A/B/C). Deliveries not allowed below Zone B.
 - G207/208 Operational
 - G207/208 Not Operational
 - **C1 Temporary Deviation:** Lake Istokpoga Regulation Schedule (Zones A/B/C1/C) implemented with the 2026 temporary deviation line as the active water-supply floor. Deliveries allowed below standard Zone B but stop when stage falls below Zone C1.
 - G207/208 Operational
 - G207/208 Not Operational

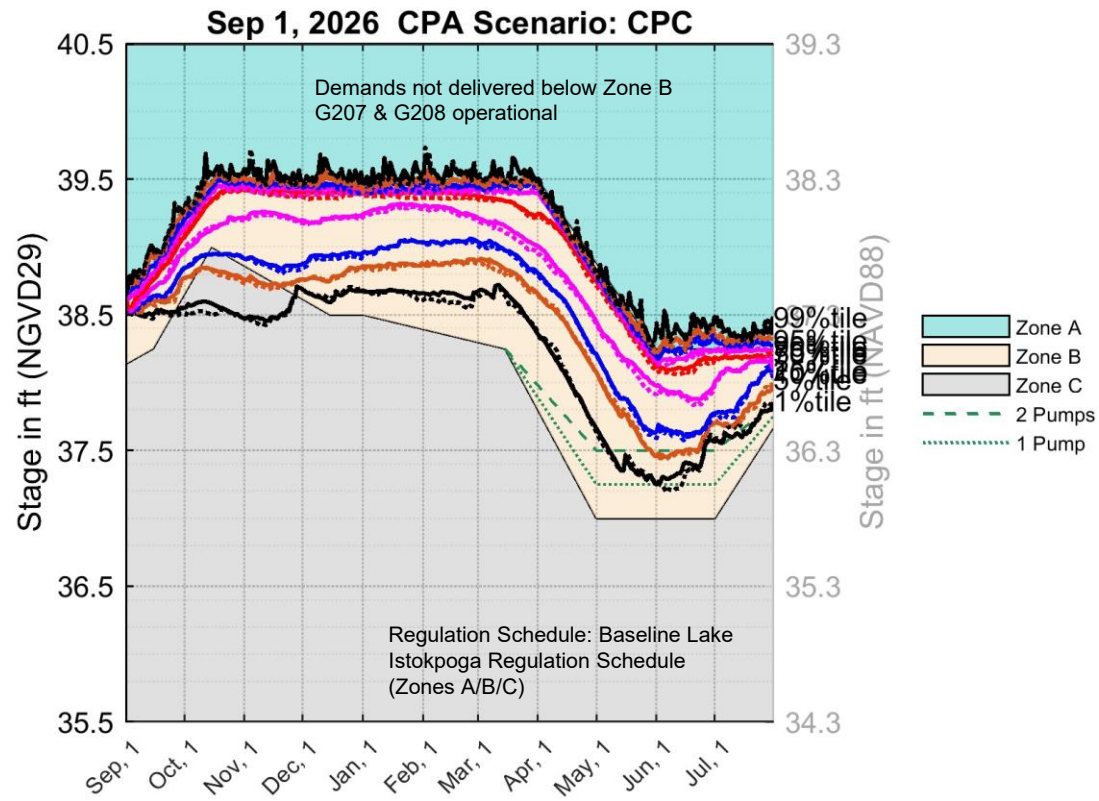
September 1, 2026 CPA: Lake Istokpoga



Baseline Release (demands not delivered below Zone B) and G207/G208 pumps operational

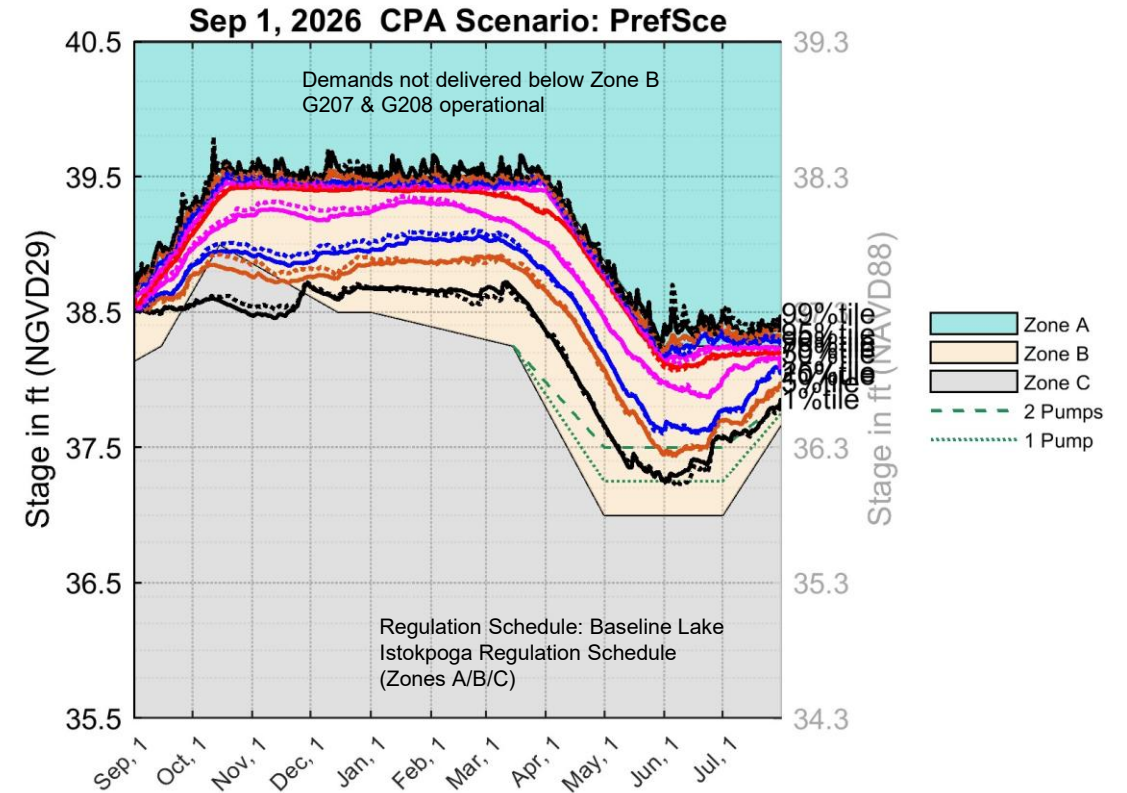
CPC

Lake Istokpoga



PrefSce

Lake Istokpoga



Secondary vertical axis shows stages in NAVD88. These stages are based on the agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.2 ft for Lake Istokpoga).

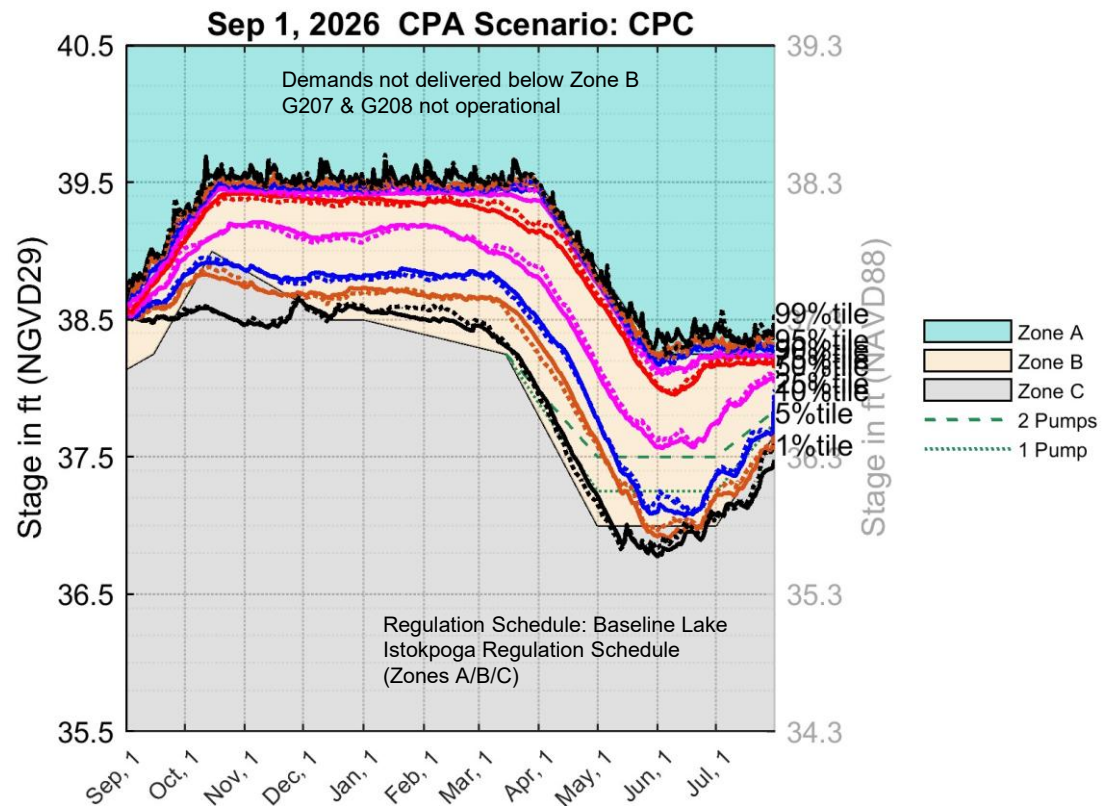
September 1, 2026 CPA: Lake Istokpoga



Baseline Release (demands not delivered below Zone B) and G207/G208 pumps not operational

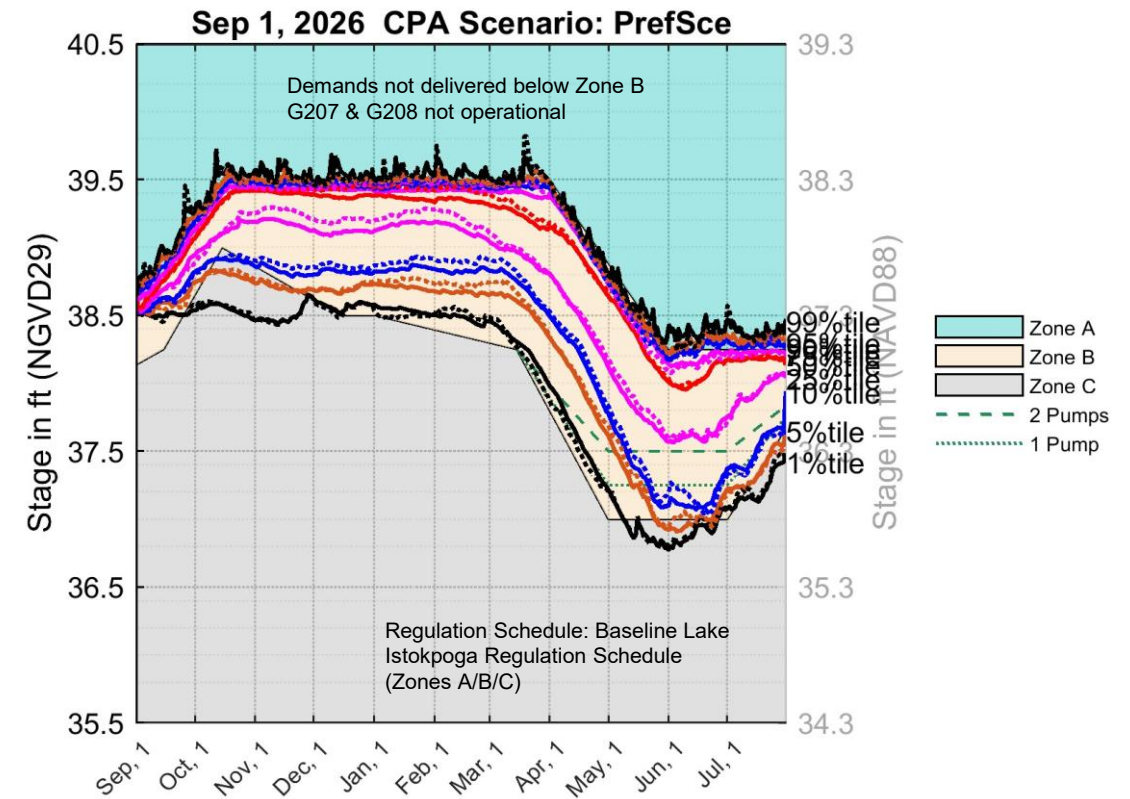
CPC

Lake Istokpoga



PrefSce

Lake Istokpoga



Secondary vertical axis shows stages in NAVD88. These stages are based on the agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.2 ft for Lake Istokpoga).

September 1, 2026 CPA: Lake Istokpoga

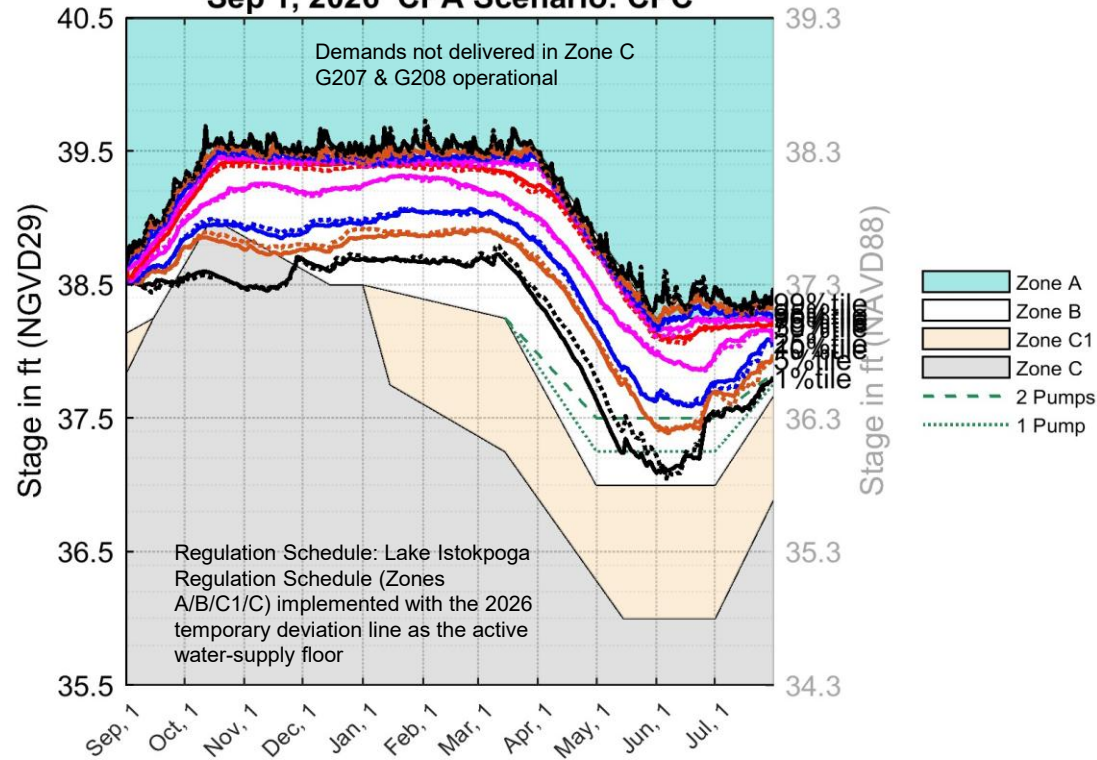


C1 Temporary Deviation (demands not delivered in Zone C) and G207/G208 pumps operational

CPC

Lake Istokpoga

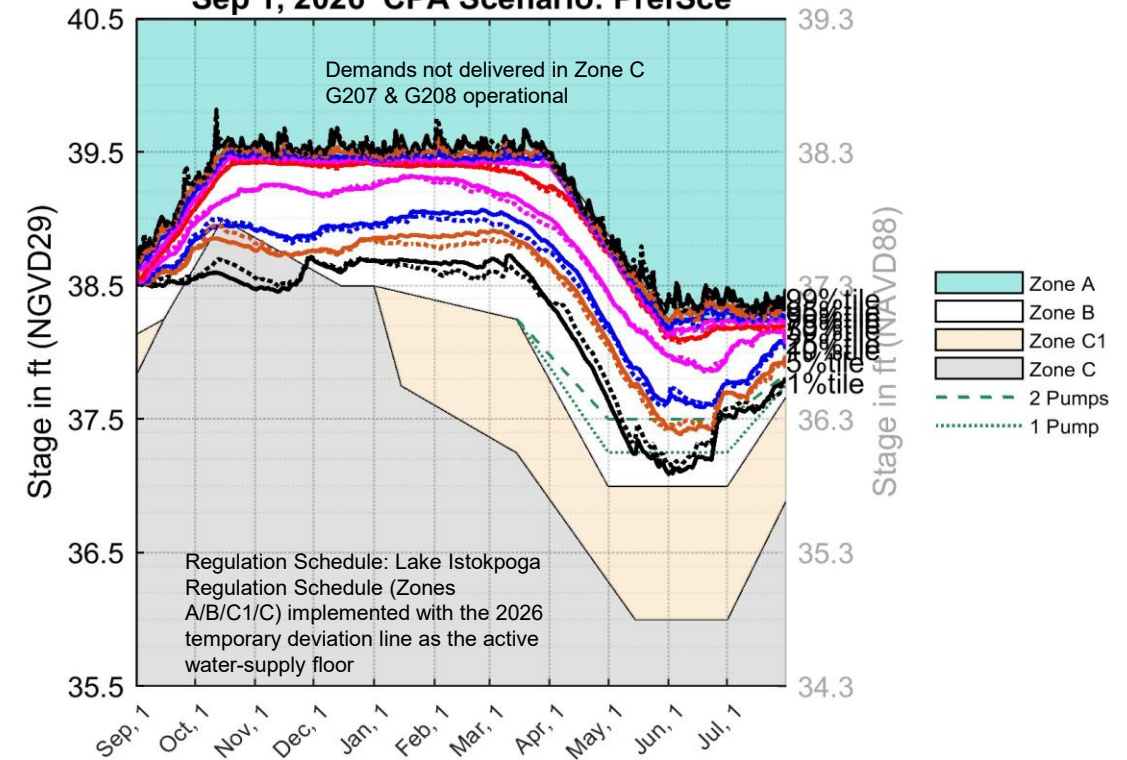
Sep 1, 2026 CPA Scenario: CPC



PrefSce

Lake Istokpoga

Sep 1, 2026 CPA Scenario: PrefSce



Secondary vertical axis shows stages in NAVD88. These stages are based on the agreed agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.2 ft for Lake Istokpoga).

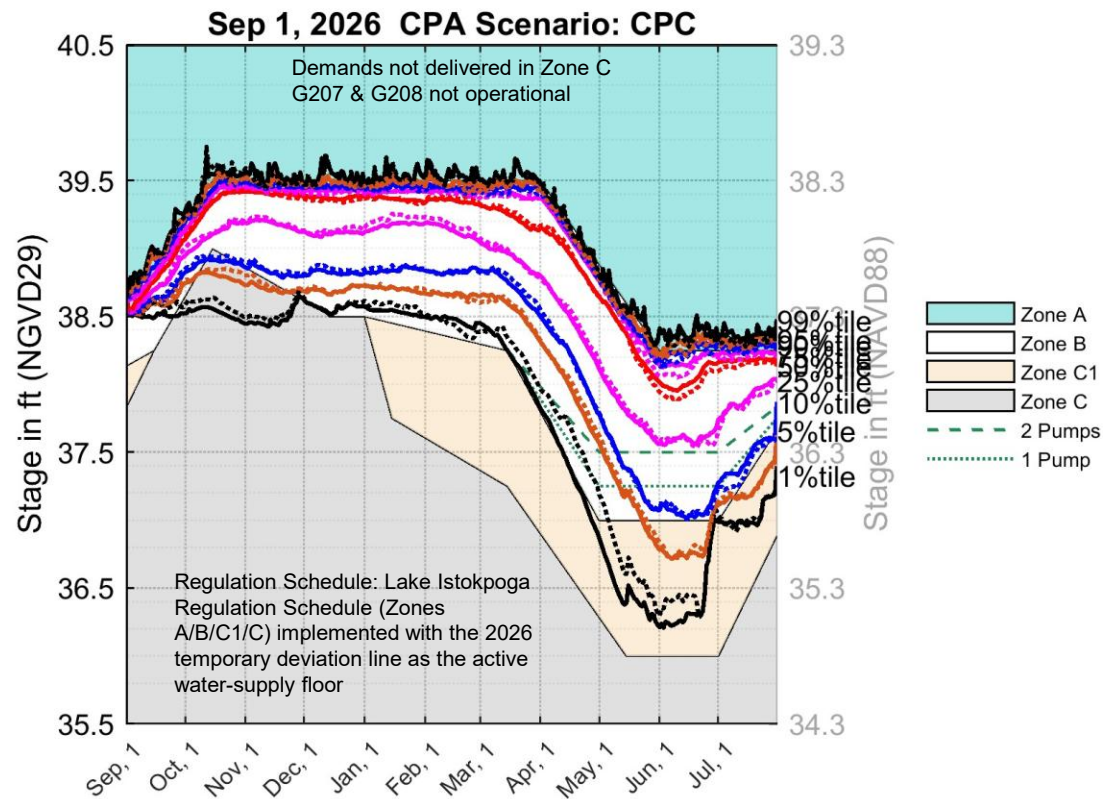
September 1, 2026 CPA: Lake Istokpoga



C1 Temporary Deviation (demands not delivered in Zone C) and G207/G208 pumps not operational

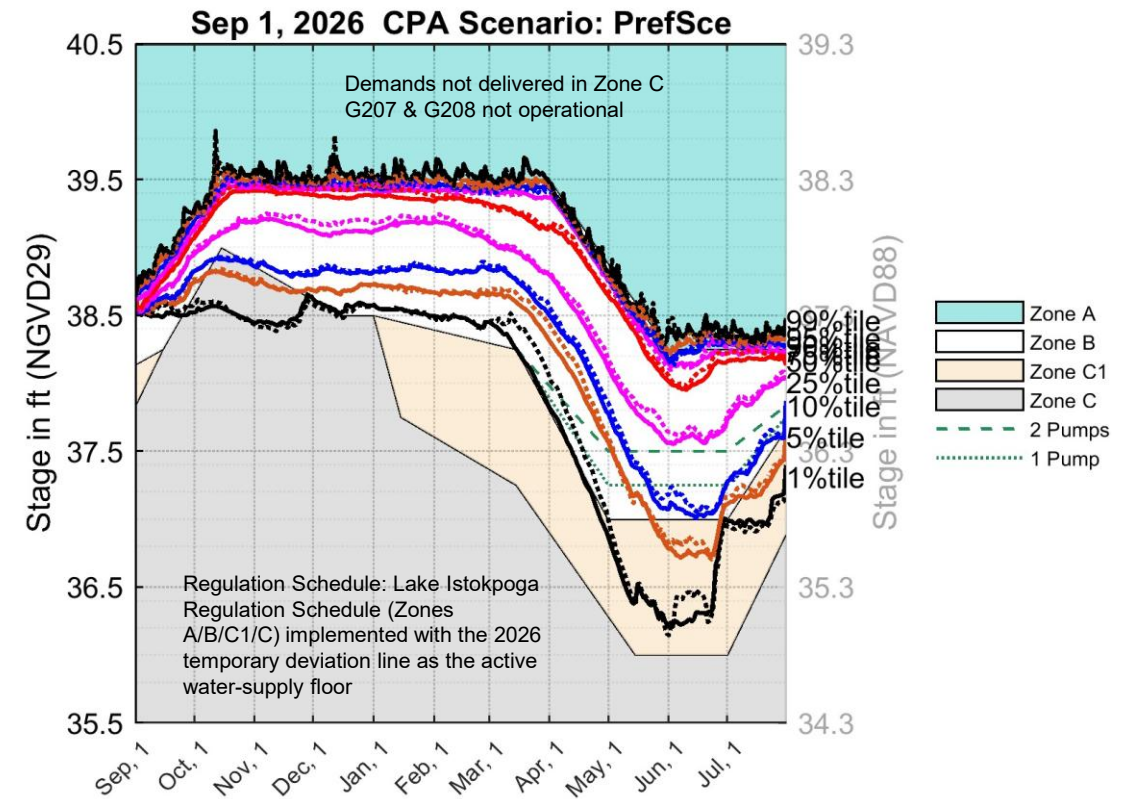
CPC

Lake Istokpoga



PrefSce

Lake Istokpoga



Secondary vertical axis shows stages in NAVD88. These stages are based on the agreed upon regulation schedule conversion offsets between NGVD29 and NAVD88 (1.2 ft for Lake Istokpoga).