



Reducing Lower Basin Shortage Risk *and* Increasing Resilience in Arizona



Ted Kowalski
Senior Program Office
Colorado River Initiative

September 10, 2018

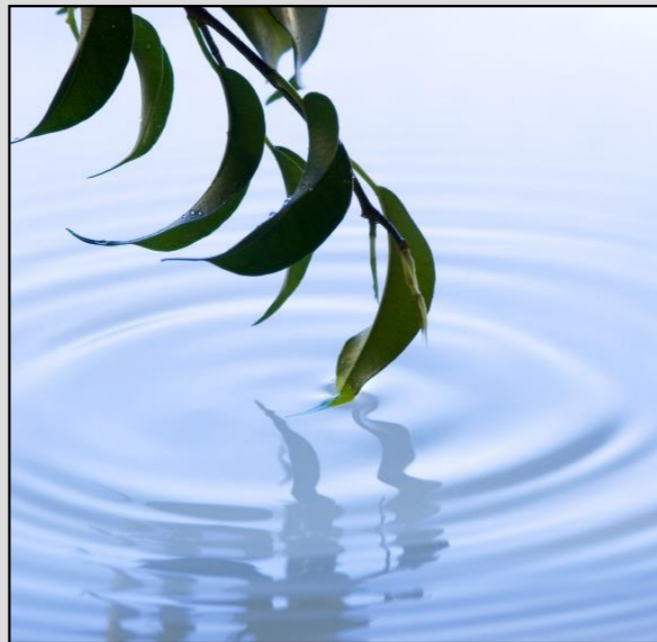


Kevin Moran
Senior Director
Western Water

Steps Towards Arizona Resiliency



Hydrology



Outlook

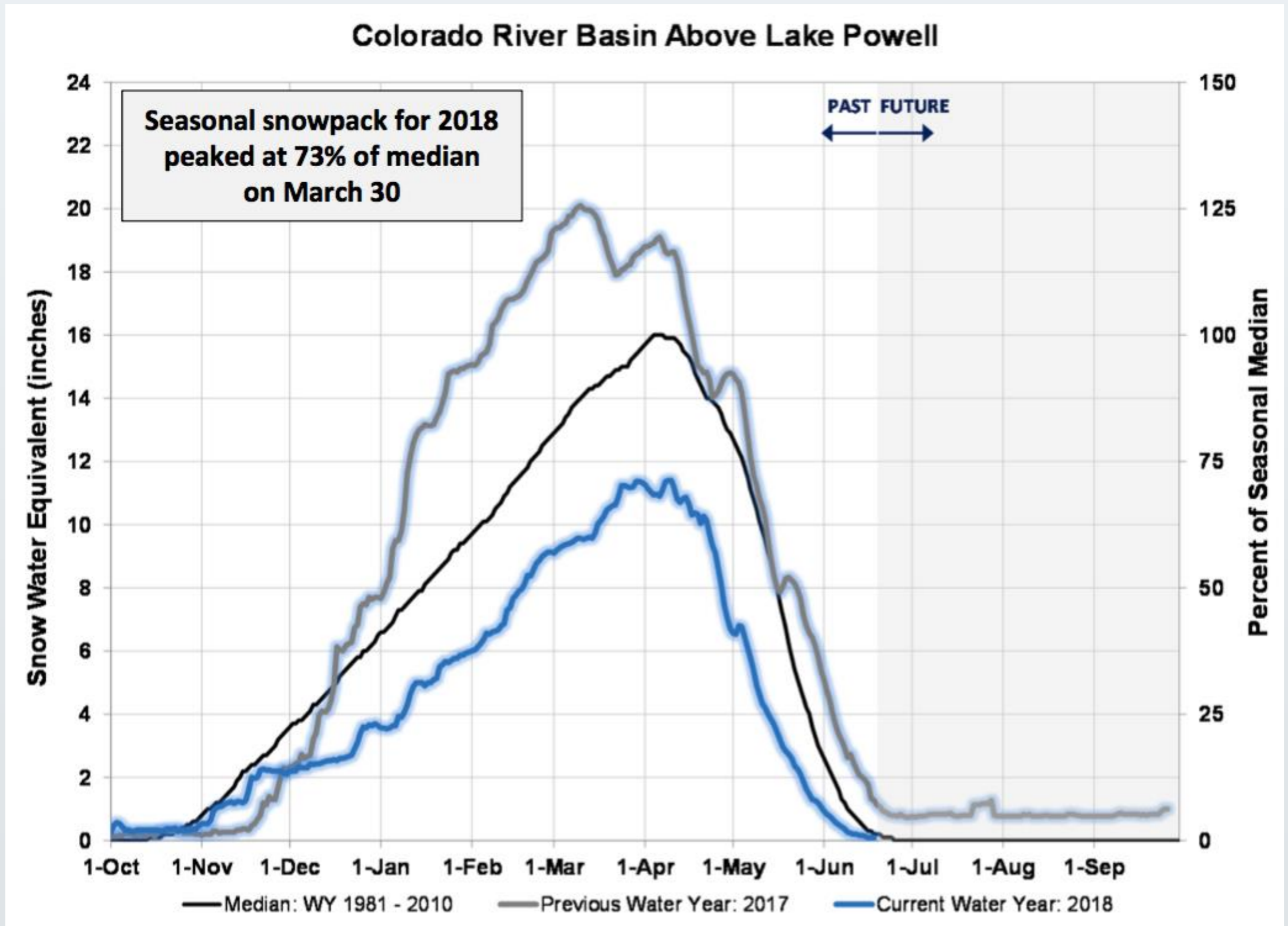


Actions



Hydrology

The year 2018 was extremely dry in most of the Colorado River Basin, with low snow pack in the Rockies and low run-off into Lake Powell



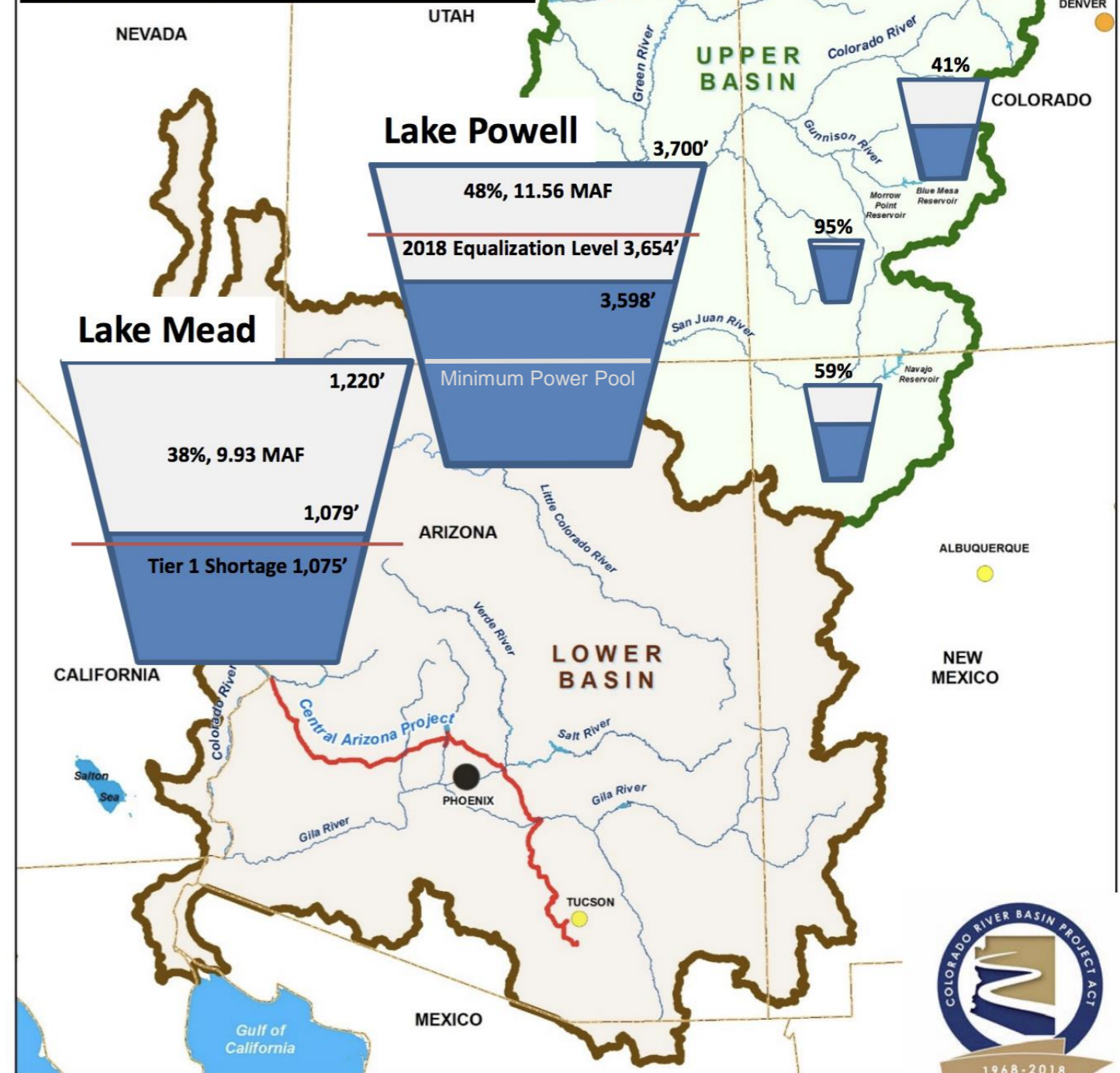
Colorado River Basin storage is at an all time low due a 19-year drought and a disconnect between available and allocated supplies

Colorado River Water Supply Report

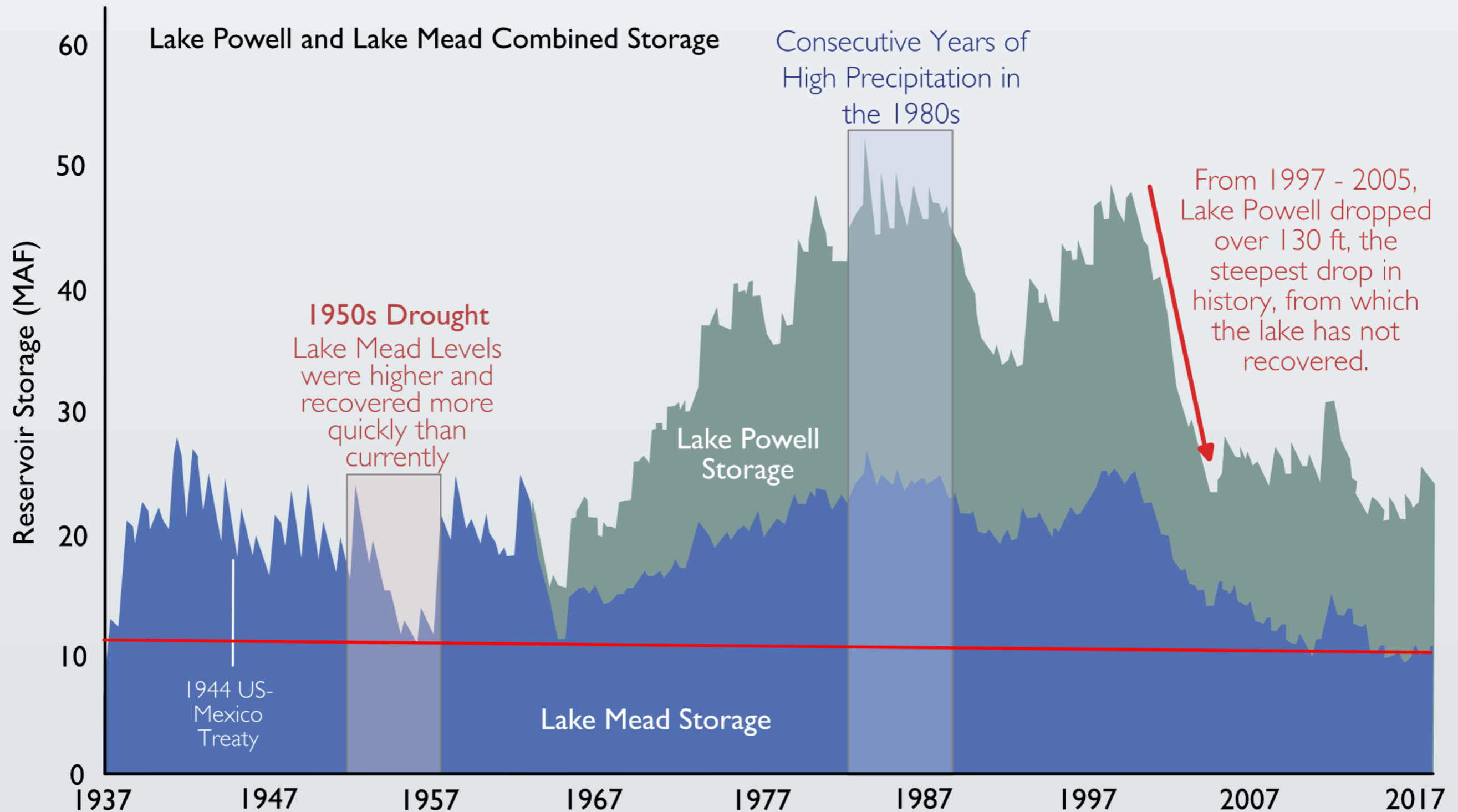
System Contents: 26.698 MAF

8/27/18

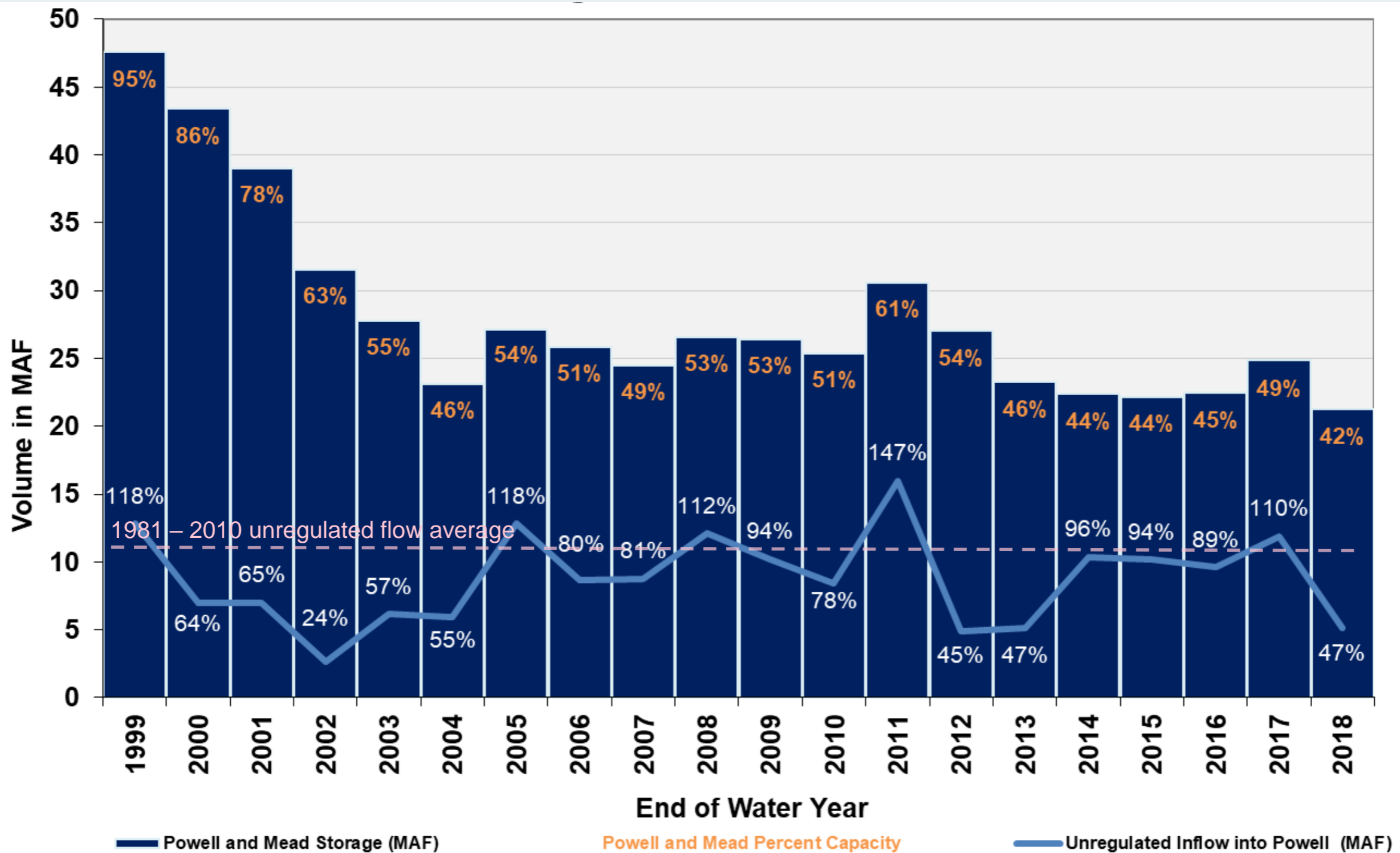
Reservoir Capacities (MAF)			
Reservoir	Current	Change	Maximum
Lake Mead	9.93	+ 0.13	25.90
Lake Powell	11.56	- 0.73	24.30
Flaming Gorge Reservoir	3.46	- 0.07	3.75
Navajo Reservoir	1.00	- 0.10	1.70
Blue Mesa Reservoir	0.34	- 0.07	0.83
Fontenelle Reservoir	0.30	- 0.03	0.34
Morrow Point Reservoir	0.11	0.00	0.12



Lake Powell and Lake Mead have dropped significantly in the past 25 years



This drop is due to overall warming in the basin, reduced inflows into Lake Powell, and overallocation relative to supplies

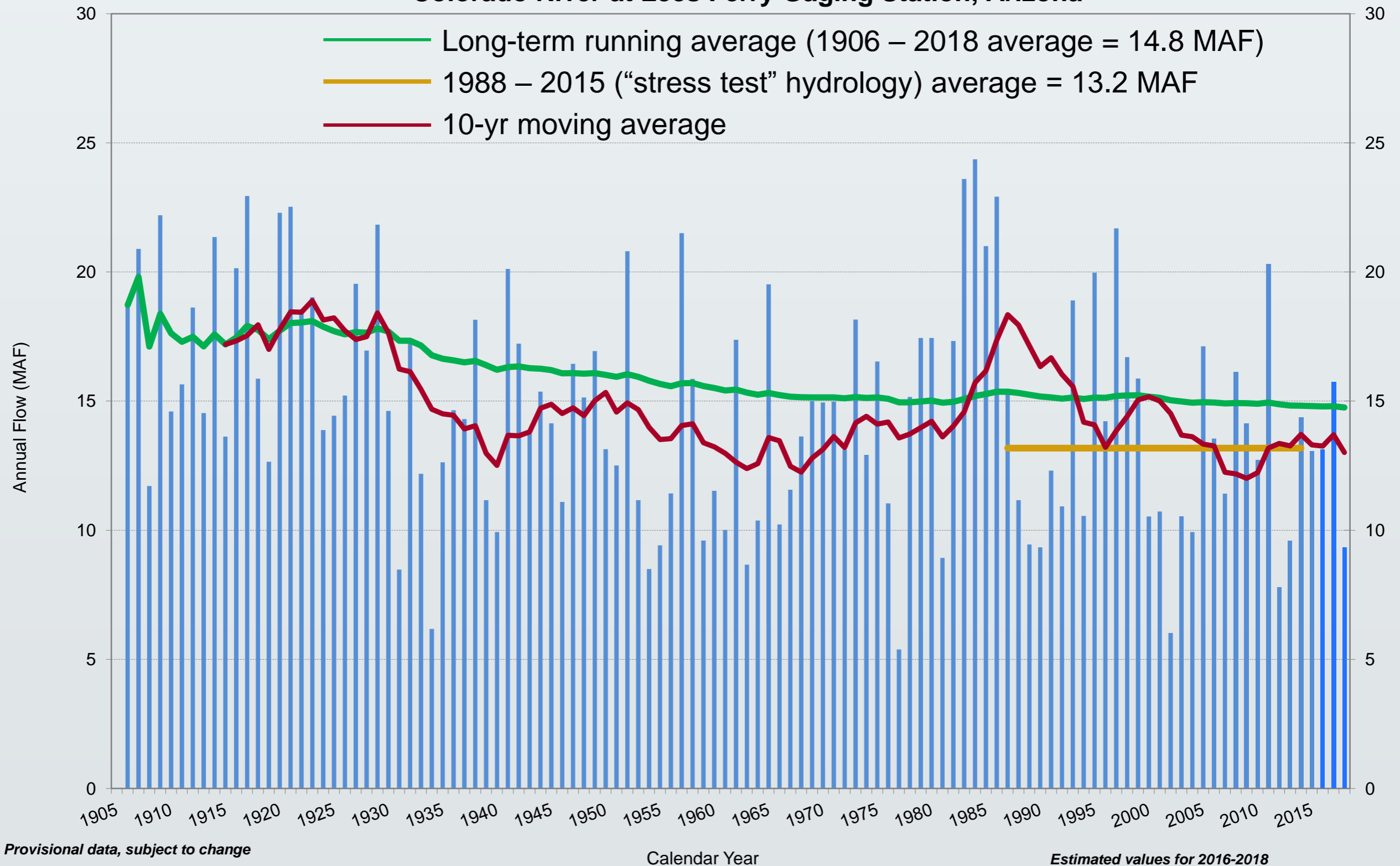


Values for Water Year 2018 are projected. Unregulated inflow is based on the latest CBRFC forecast dated June 18, 2018. Storage and percent capacity are based on the June 2018 24-Month Study.

Percentages on the light blue line represent percent of average unregulated inflow into Lake Powell for a given water year. The percent of average is based on the period of record from 1981-2010.

The BoR has recently compared hydrology from the full period of record to the “stress test”, which represents the last 30 years

Natural Flow (Water Year 1906 to 2018)
Colorado River at Lees Ferry Gaging Station, Arizona



Historical and Future Projected Lake Mead End-of-December Elevations

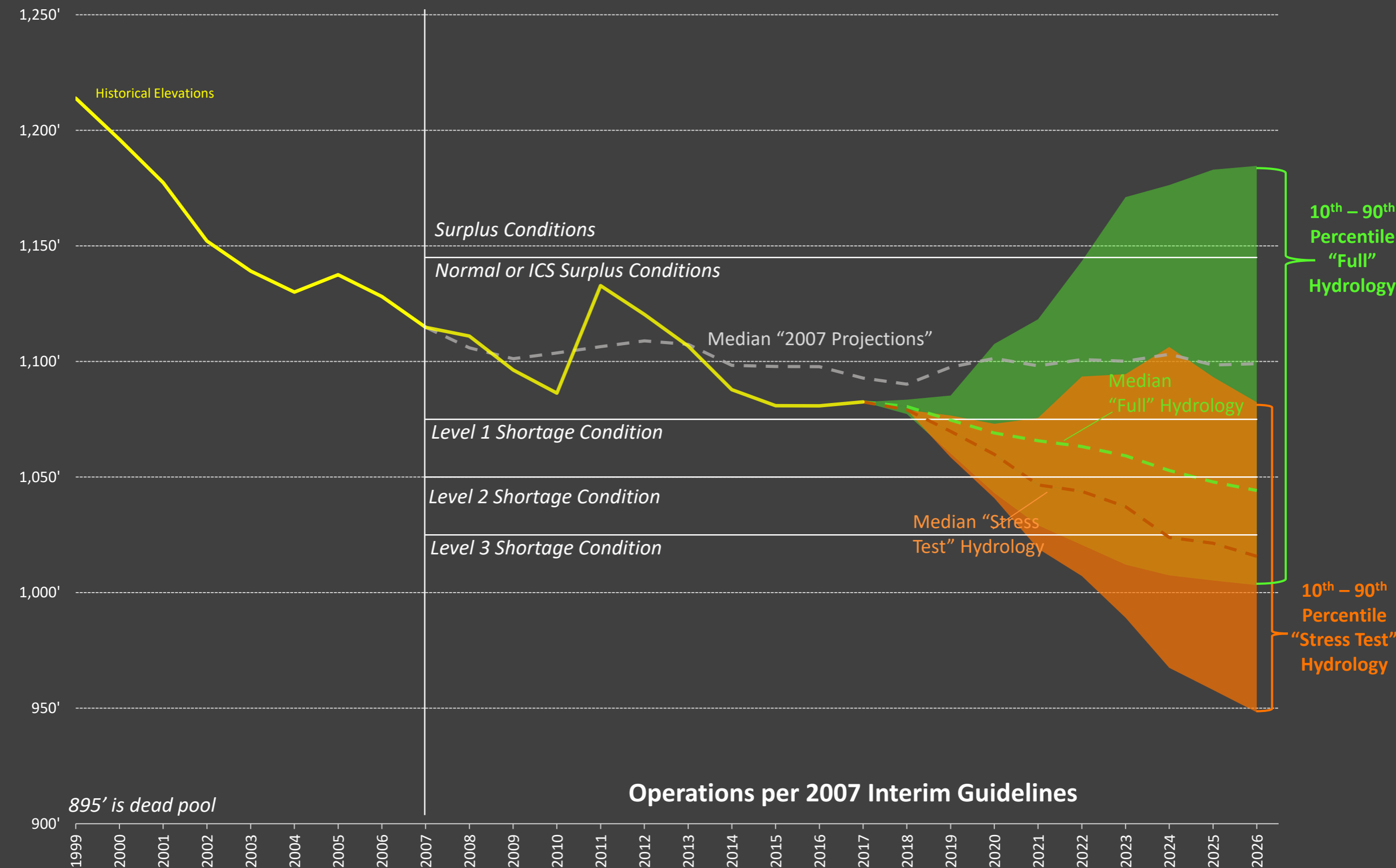


Figure notes:
2007 Projections from Interim Guidelines FEIS. Future hydrology based on resampling of the 1906-2005 natural flow record.
"Full" Hydrology from April 2018 CRSS. Future hydrology based on resampling of the 1906-2015 natural flow record.
"Stress Test" Hydrology from April 2018 CRSS. Future hydrology based on resampling of the 1988-2015 natural flow record.



Outlook

In August, the Bureau of Reclamation issued updated probabilities of shortage for 2019-2023

The projections indicate there will not be a Lower Basin shortage in 2019 under the 2007 Interim Guidelines but they indicate a 57 percent likelihood for Lower Basin shortage in 2020.

In addition, BoR modelling indicate that the elevation of Lake Mead could drop by 20 feet or more by mid-2020.

		2019	2020	2021	2022	2023
Lower Basin - Lake Mead	Shortage Condition – any amount (Mead \leq 1,075 ft)	0	57	68	70	65
	<i>Shortage – 1st level (Mead \leq 1,075 and \geq 1,050)</i>	0	57	42	40	28
	<i>Shortage – 2nd level (Mead \leq 1,050 and \geq 1,025)</i>	0	0	26	23	24
	<i>Shortage – 3rd level (Mead \leq 1,025)</i>	0	0	0	7	14
	Surplus Condition – any amount (Mead \geq 1,145 ft)	0	0	3	5	7
	<i>Surplus – Flood Control</i>	0	0	0	1	2
	Normal or ICS Surplus Condition	100	43	29	25	27

In 2007, Interim Guidelines for Lower Basin Shortages were established, but are now insufficient to address the current risks of the system

Lower Basin Drought Contingency Plan

The Need

The risk of Lake Mead falling below 1,025' in the year 2026 has doubled since the development of the 2007 Interim Guidelines. Under the “Stress Test” hydrology, this risk is about six times higher.

The DCP Goal

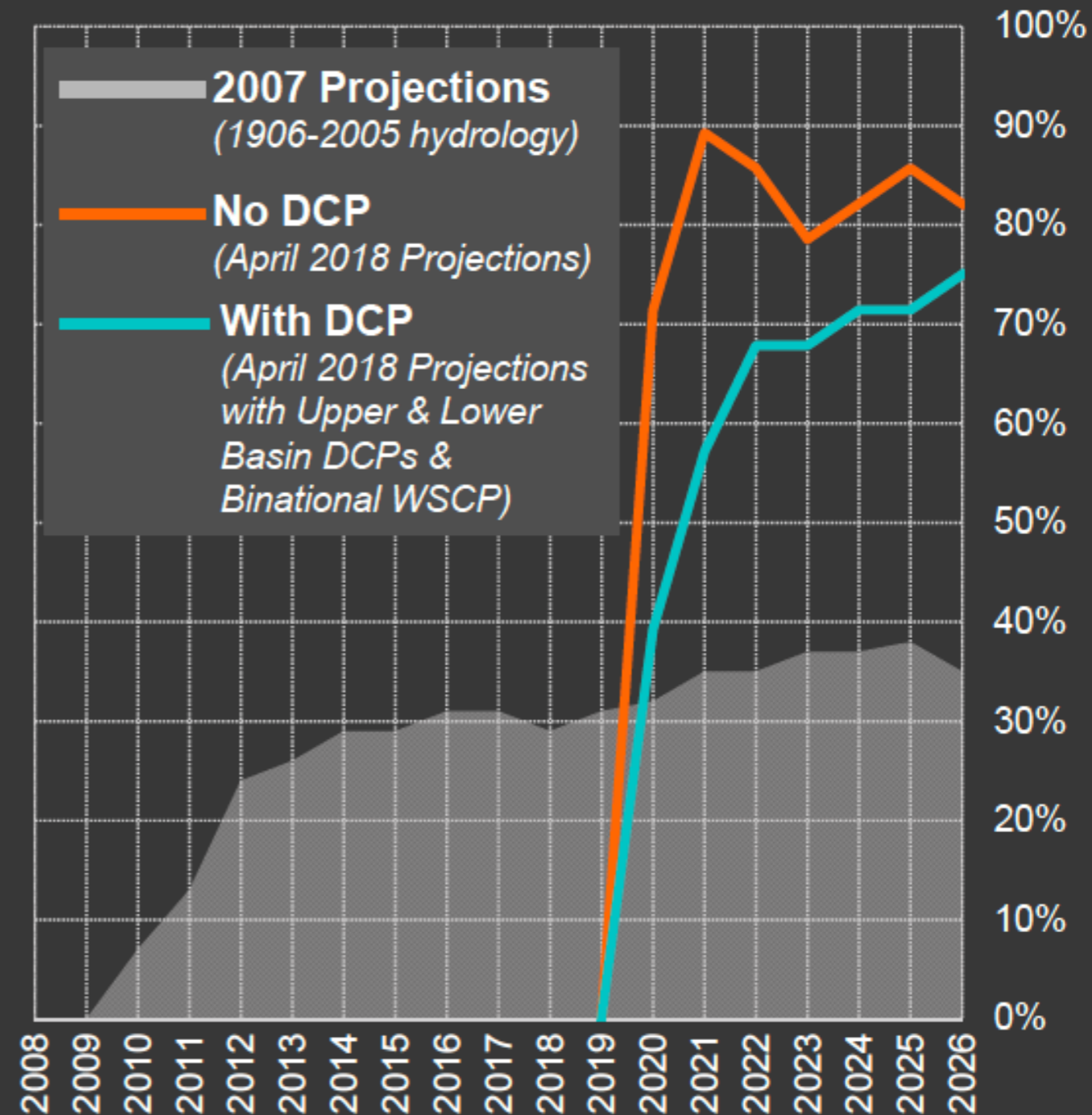
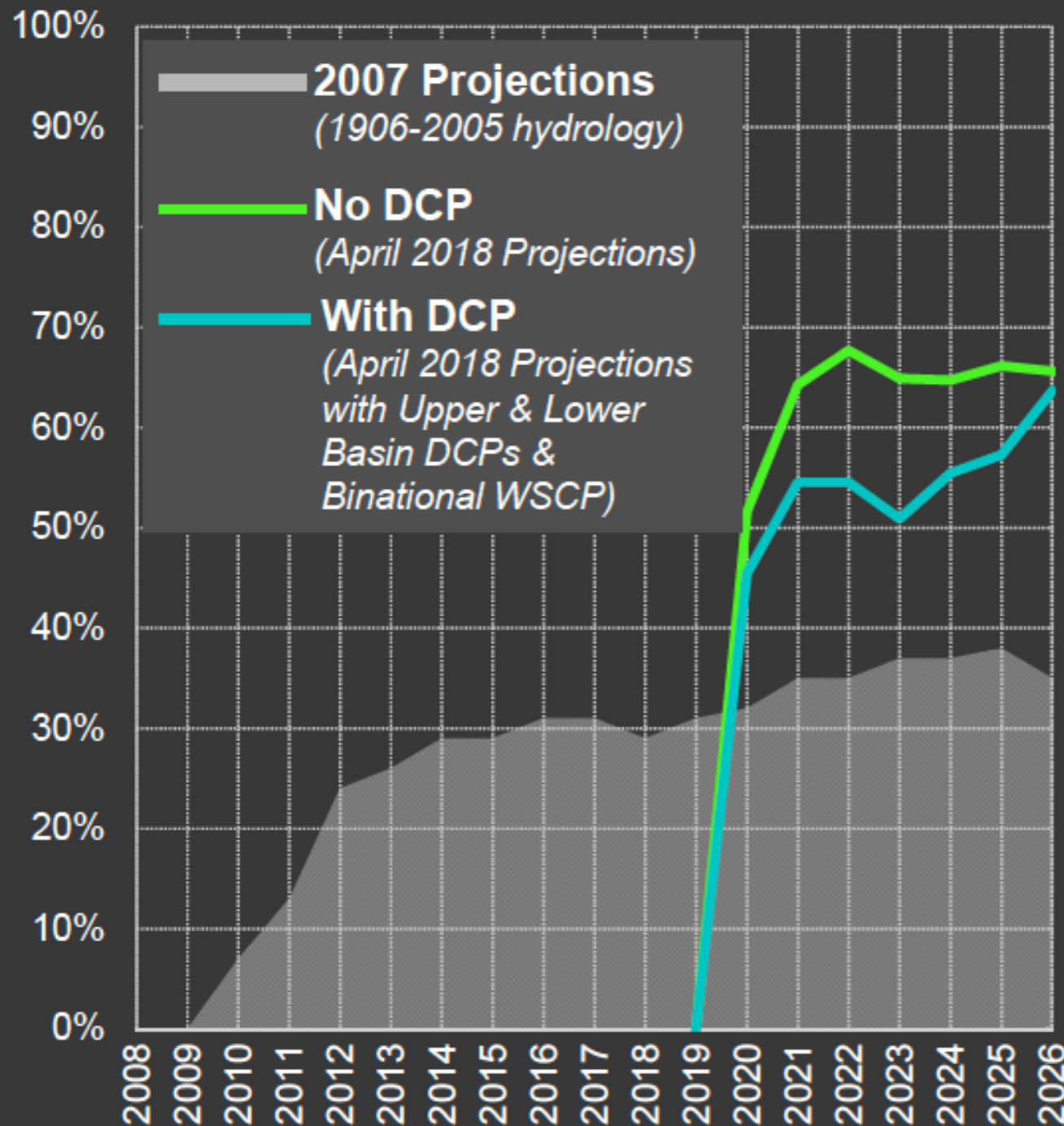
Reduce the probability of reaching critical elevations that could cause drastic reductions in water deliveries in Arizona

Risk of Lake Mead < 1,075'

9.6 maf
37%
1,075'

Full Hydrology (1906-2015)

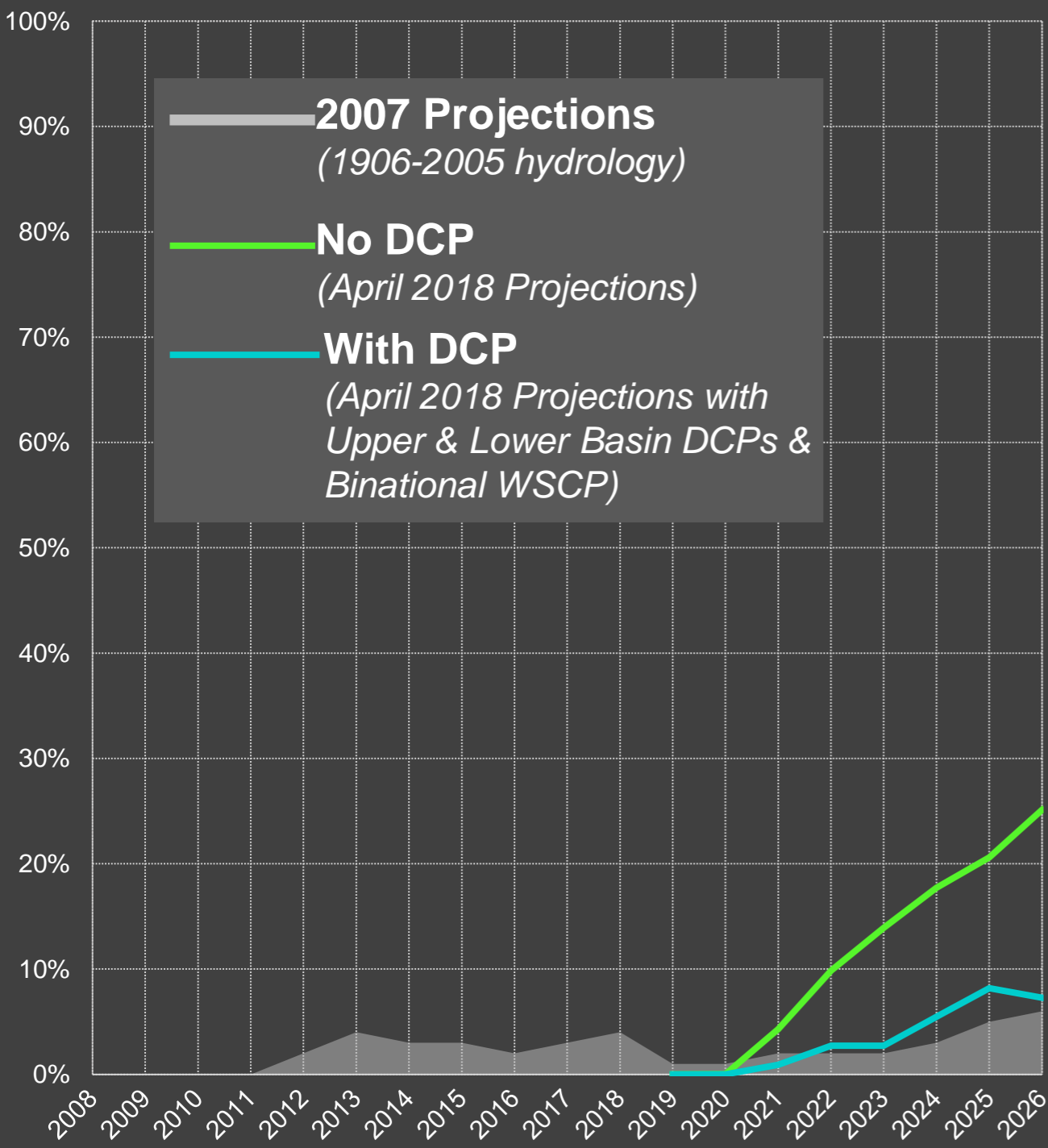
Stress Test Hydrology (1988-2015)



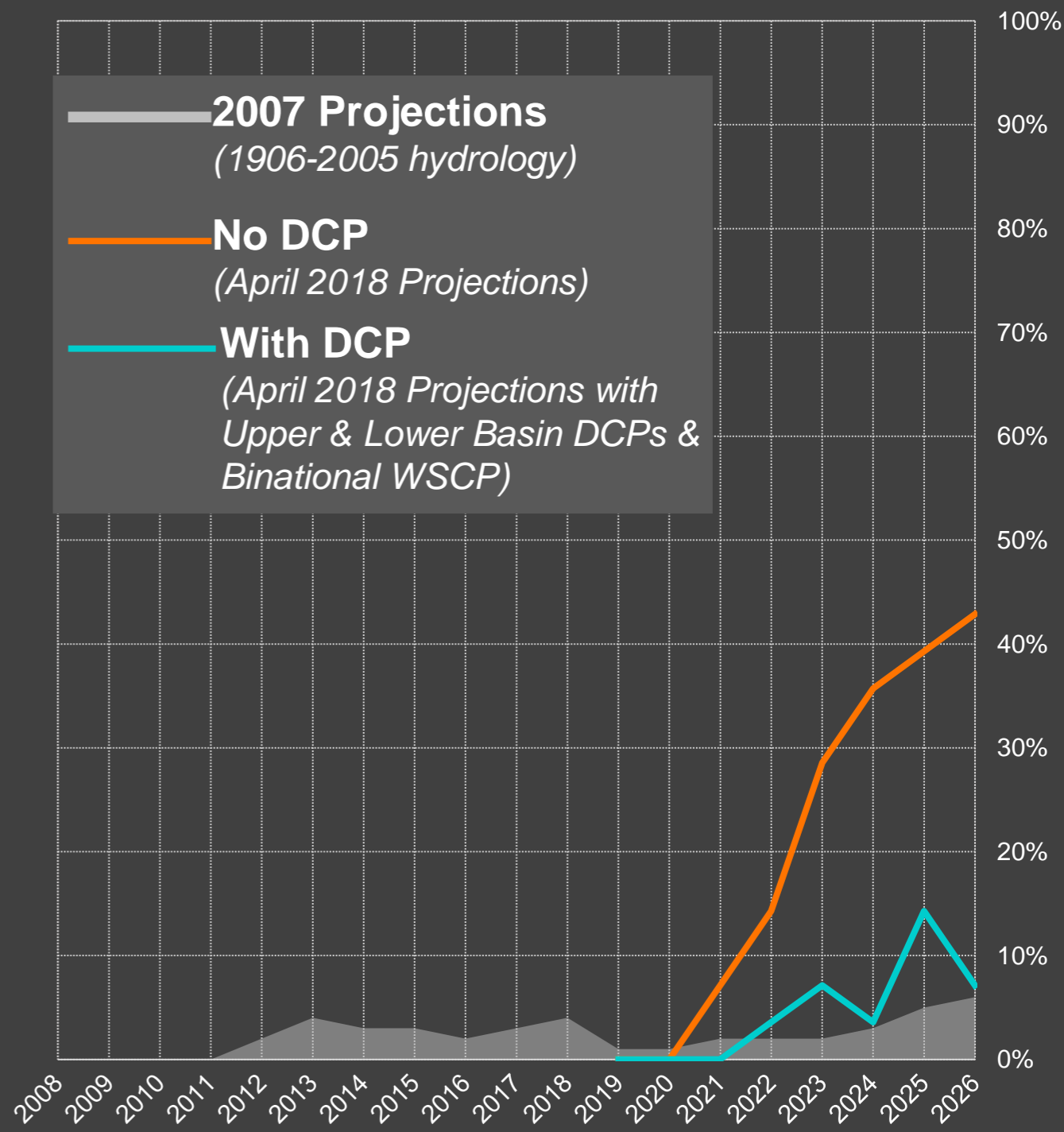
Risk of Lake Mead < 1,020'

5.7 maf
22%
1,020'

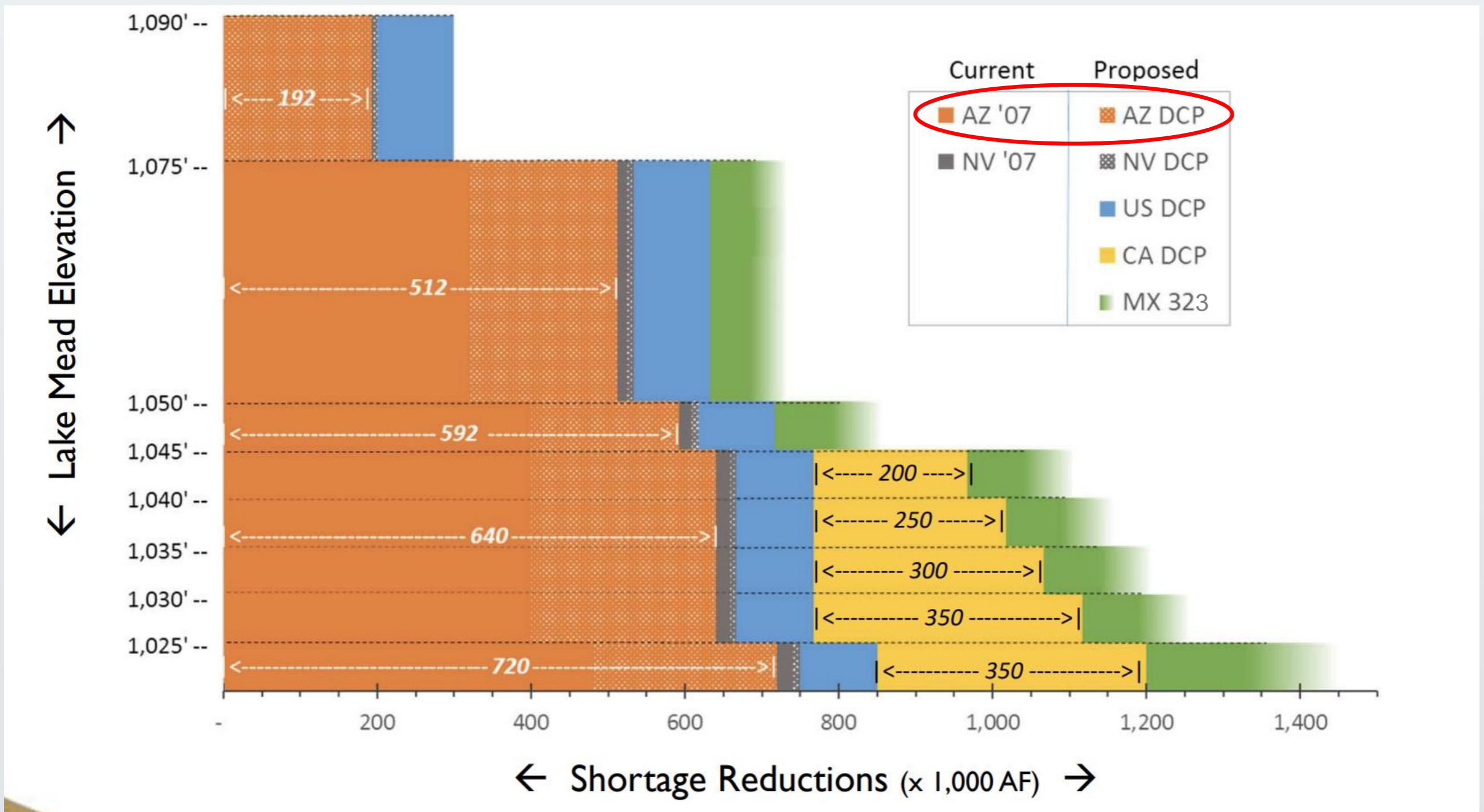
Full Hydrology (1906-2015)



Stress Test Hydrology (1988-2015)



Implementing the DCP means Arizona will assume significant recutions in Colorado River water deliveries





Actions

ADWR-CAP DCP Steering Committee is meeting every two weeks to determine how Arizona will absorb reduced deliveries

ADWR and CAWCD identified the mission of the Steering Committee, as an opportunity to:

“discuss and recommend how to adopt and implement the Lower Basin Drought Contingency Plan (LBDCP) in a way that is acceptable to Arizona water users.”



During the meeting, ADWR and CAWCD also identified four essential elements to consider as tools to implement the Lower Basin Drought Contingency Plan (LBDCP) that are focused on mitigating the differential impacts of LBDCP and on sustaining collaborative processes within Arizona – keeping in mind the technical analysis of impacts and the political realities of getting to a joint resolution through the Arizona Legislature in 2019.

ADWR-CAP have four steering committee tools

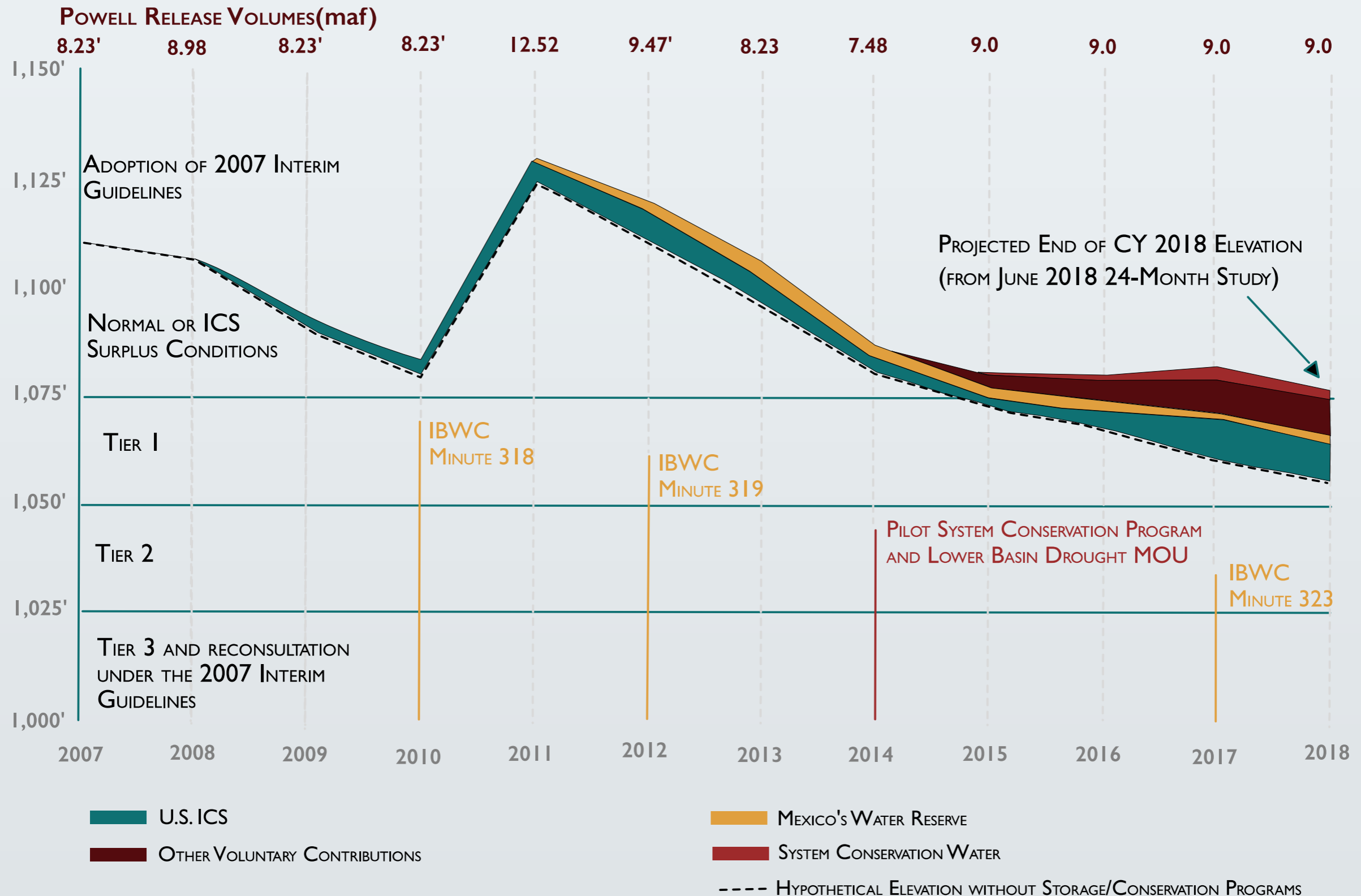
CAP Agriculture Mitigation -- The CAP Agriculture Pool faces reductions under the LBDGP, but receives limited benefits, so part of the Arizona plan development is to see how we can mitigate the impact to the agricultural sector.

Tribal Intentionally Created Surplus (ICS) – Currently, the Non-Indian Agriculture (NIA) Pool is largely held by CAP Tribes with settlements. The Tribal ICS tool provides some flexibility for management of supplies provided from settlements and on-River entitlements.

CAP Excess Water Plan – Over the past few years and this year, the CAP Excess Water supply has been the major contributor to “tier zero” reductions (Lake Mead elevation above 1075’). Discussions about this tool will explore how to continue the collaborative approach that has been in place so that Arizona can continue to achieve multiple benefits from the CAP Excess Water supply when it is available.

Arizona Conservation Plan – Discussion about this concept will explore a new collaborative process to foster broader participation to help meet Arizona’s LBDGP reductions by allowing for broader participation in contributions to Lake Mead.

System Conservation projects, in tandem with other conservation efforts, have helped to keep Lake Mead from falling below Tier 1



There are opportunities to stay engaged in this process, and to stay up to date on the latest river and reservoir conditions

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Western Water News


Connecting the Dots: From DCP and Lake Mead to Protecting Flowing Rivers and Habitat

Why birders and wildlife advocates should care about Lake Mead





By Haley Paul
June 28, 2018

Birds in This Story



Yellow-billed Cuckoo
Coccyzus americanus





Lake Mead. Photo: [Matt Kieffer](#)/Flickr (CC BY-SA 2.0)

If Lake Mead declines to critical elevations, water users may look elsewhere for water.

Water resources like groundwater, and existing Arizona regulations that promote sustainable water planning may come under increased scrutiny and pressure. Arizona's valuable rivers and streams, and the habitats they provide for birds could be at risk if groundwater pumping increases.

We need to implement policies that increase the likelihood of maintaining a flowing Colorado River. Birds, fish, wildlife, and people all are relying on it.

- **Learn More:** <http://bit.ly/BirdsAndTheDCP>
- **Join the Network:** <http://bit.ly/JoinWRAN>

ADWR DCP Website
new.azwater.gov/lbdcp

CAP DCP Website
[www.cap-az.com/departments
/planning/colorado-river-programs/az-dcp-
discussion](http://www.cap-az.com/departments/planning/colorado-river-programs/az-dcp-discussion)

US Bureau of Reclamation
www.usbr.gov/lc/



Thank you!

