

# Colorado River Risk Study Phase III

An Update for the 4 West Slope Basin Round Table Meeting

Grand Junction, Colorado

June 20, 2019

# What does Modeling tell us about Risk?

Model analysis from Phase III of the Risk Study using the 1988–2015 Stress Test Hydrology indicates:

1. The likelihood of Lake Powell Dropping below 3525' at some point in the next 25 years is ~ 39% (11 of 28 traces).
2. The likelihood of the 10–year running average Lee Ferry volume dropping below 82.5 Maf is ~ 46% (13 of 28 traces)
3. The likelihood of the 10–year running average Lee Ferry volume dropping below 75 Maf is ~ 0%\* (0 of 28 traces)

An increase in annual Upper Basin Consumptive Use averaging 11.5% (approximately 500 Kaf)\*\* roughly doubles the risk of #1 and #2.

***\*Note that previous Risk Study simulations and Reclamation runs have shown likelihoods greater than zero at the 75 Maf threshold (Model assumptions matter!)***

***\*\*The UCRC Demand Schedule anticipates reaching that level of use by ~2037.***

# Pre-Emptive Water Management Options

The recently approved Drought Contingency Plans (DCPs) provide a mechanism for protecting critical elevations at both Lake Powell and Lake Mead.

The Upper Basin DCP has three components intended to reduce or eliminate the risk of reaching critically low Lake Powell levels:

1. Cloud Seeding and Phreatophyte Control (Ongoing)
2. Drought Operations of CRSP storage facilities (Subject to consultation between UB States and Reclamation)
3. Exploration of voluntary and compensated Demand Management program, including use of 500,000 af water bank in one or more CRSP facilities

If these (and possibly other) pre-emptive actions are insufficient to protect Lake Powell levels, and if as a result Lake Powell was unable to release sufficient water past Lee Ferry, a Compact Deficit could result.

## Colorado's Consumptive Use of Colorado River Water

Basin	Annual Depletions (acre-feet)		
	Minimum	Average	Maximum
Yampa	173,547	196,982	215,193
White	48,550	62,060	70,397
Colorado	1,117,487	1,220,386	1,345,192
<i>In-Basin</i>	650,887	669,397	692,333
<i>TMDs</i>	466,600	550,989	652,859
Gunnison	481,626	552,418	601,030
Southwest	335,365	500,717	556,627
Total	2,156,575	2,532,564	2,788,439

All Results Presented herein are Preliminary and Subject to Change

# A Closer Look at Pre/Post Compact Depletions

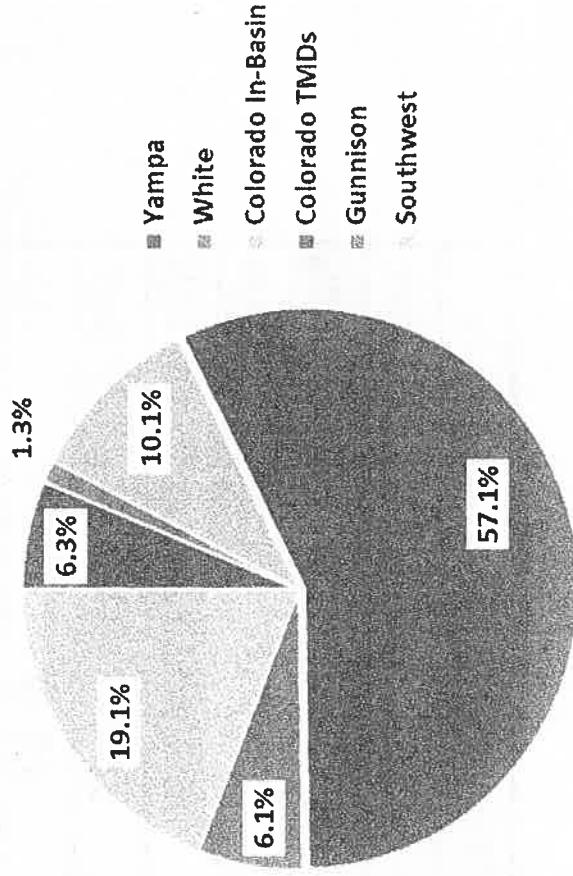
Basin	Average Annual Depletions (acre-feet)		
	All Users	Pre-Compact	%Pre-Compact
Yampa	196,982	138,544	70%
White	62,060	50,173	81%
Colorado	1,220,386	594,169	49%
In-Basin	669,397	574,997	86%
TMDs	550,989	19,173	3%
Gunnison	552,418	495,147	90%
Southwest	500,717	322,561	64%
Total	2,532,564	1,600,594	63%

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# Who is Impacted by Curtailment of all Post-Compact Rights?

Basin	Average Annual Depletions (af)	
	Post-Compact	% of Total
Yampa	58,438	6.3%
White	11,887	1.3%
Colorado	626,216	67.2%
In-Basin	94,400	10.1%
TMDs	531,816	57.1%
Gunnison	57,271	6.1%
Southwest	178,157	19.1%
Total	931,969	100.0%

Post-Compact Depletions



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## Sub-Basin Distribution

For a given target volume, administration dates are developed for each sub-basin

Target Volume (acre-feet/yr)	Yampa	White	Colorado	Gunnison	Southwest
	6.3%	1.3%	67.2%	6.1%	19.1%
100,000	6,270	1,276	67,186	6,145	19,116
	Jul 1972	Jul 1962	Jul 1957	Nov 1957	Sep 1940
300,000	18,811	3,827	201,557	18,436	57,348
	Aug 1962	May 1955	Nov 1935	Apr 1955	Sep 1940
600,000	37,622	7,653	403,114	36,871	114,697
	Jun 1952	Jan 1938	Aug 1935	Dec 1933	Nov 1935

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