

**Hilts, Derek**

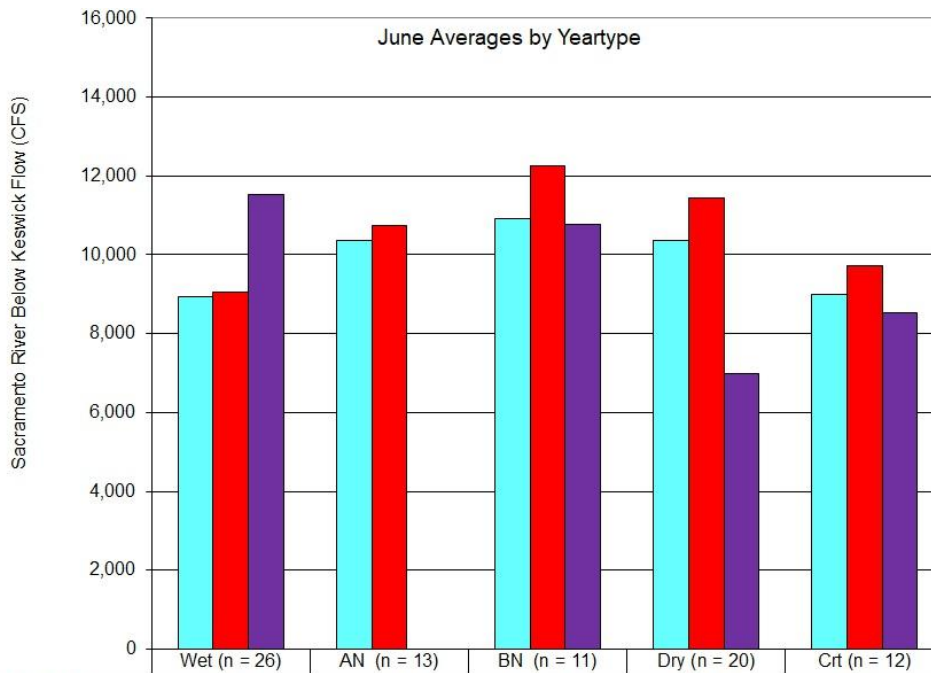
**From:** Hilts, Derek  
**Sent:** Friday, April 12, 2019 10:23 AM  
**To:** Cathy.Marcinkevage@noaa.gov; Evan.Sawyer@noaa.gov; Garwin.Yip@noaa.gov; Howard.Brown@noaa.gov  
**Subject:** ROC on LTO simulation of Keswick Jun, Jul, Aug releases

You've probably already looked at this. I looked at it with an eye towards Maria's question of does the COS mimic actual actions (lower Keswick releases) since the 2009 BiOp was promulgated?

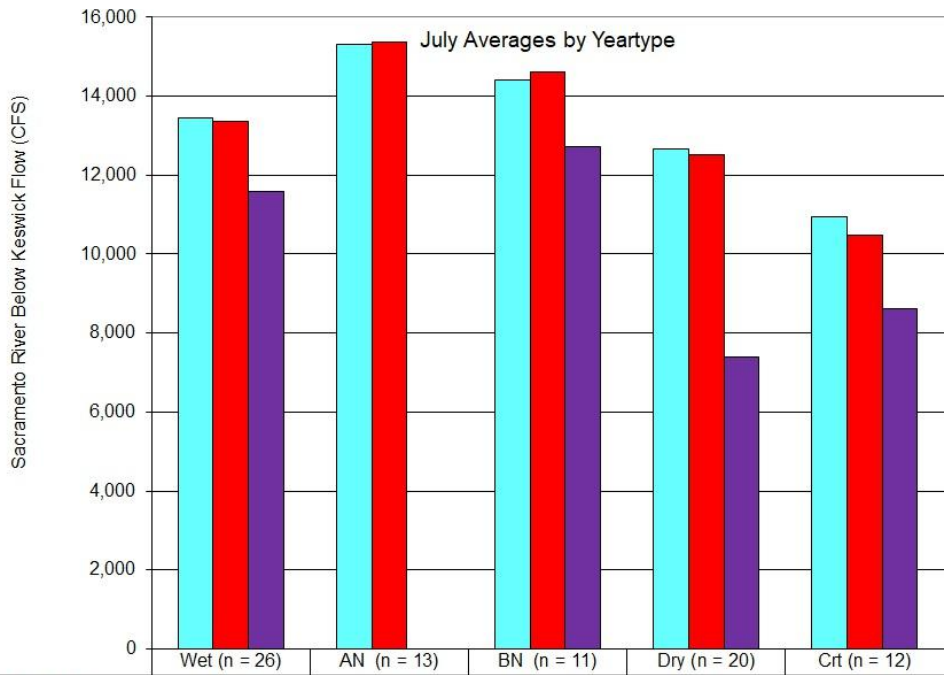
Please use caution interpreting the results as the historical bars have very few years supporting them (zero years in the case of Above Normal).

Derek

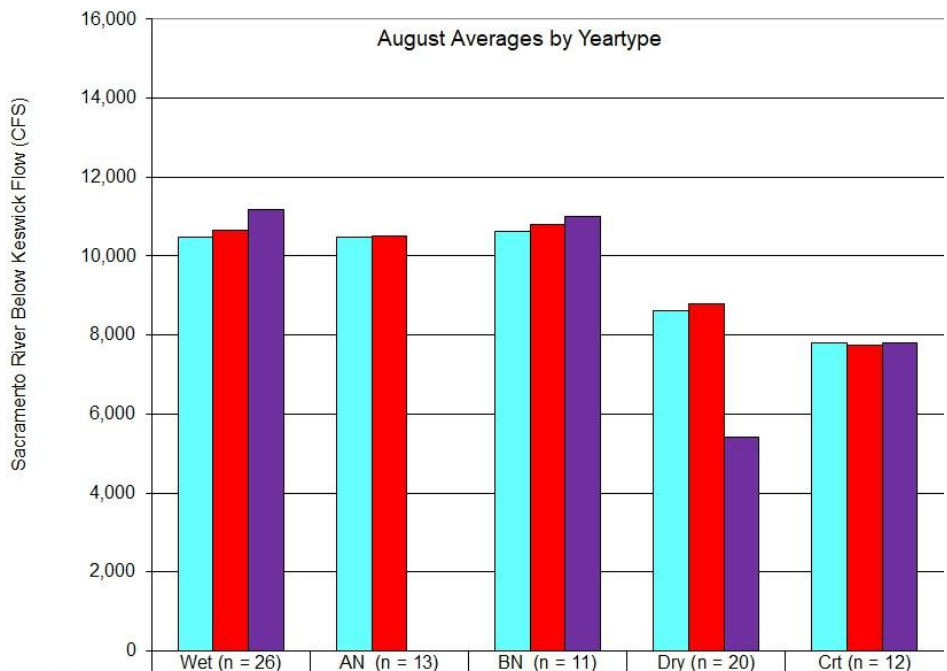
Derek Hilts M.S., P.E.  
US Fish and Wildlife Service  
650 Capitol Mall Room 8-300  
Sacramento, California 95814  
Work desk phone 916.930.5633



	Wet (n = 26)	AN (n = 13)	BN (n = 11)	Dry (n = 20)	Crit (n = 12)
LTO-Current Operations	8940.3	10358.5	10930.1	10368.1	8983.9
LTO-Proposed Operations	9046.5	10737.8	12257.5	11440.7	9729.4
Historical WY 2010 - WY 2018	11516	0	10776	6988	8532



	Wet (n = 26)	AN (n = 13)	BN (n = 11)	Dry (n = 20)	Crit (n = 12)
LTO-Current Operations	13440.4	15316.4	14421.1	12658.4	10946.6
LTO-Proposed Operations	13351.6	15382.2	14608.9	12525.0	10480.6
Historical WY 2010 - WY 2018	11590	0	12712	7384	8606



	Wet (n = 26)	AN (n = 13)	BN (n = 11)	Dry (n = 20)	Crit (n = 12)
LTO-Current Operations	10474.2	10493.5	10623.6	8607.5	7792.9
LTO-Proposed Operations	10647.2	10502.6	10806.9	8800.5	7736.8
Historical WY 2010 - WY 2018	11166	0	10998	5420	7787