

APPENDIX C

Hydrology Figures and Tables

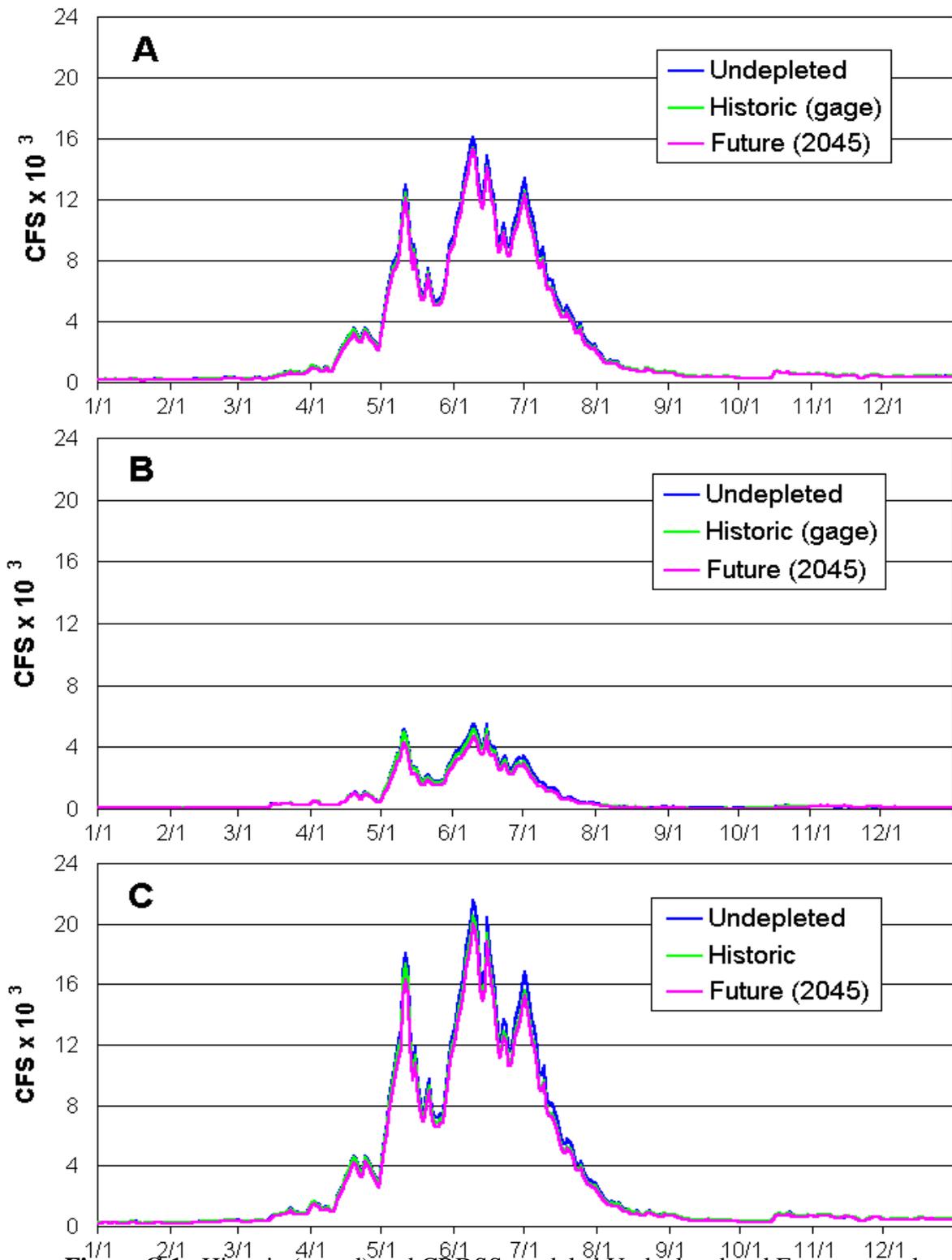


Figure C 1. Historic (gaged) and CRDSS-modeled Undepleted and Future annual hydrographs at A) Maybell, B) Lily Park and C) Deerlodge Park during 1957, a median wet year (5% exceedance)

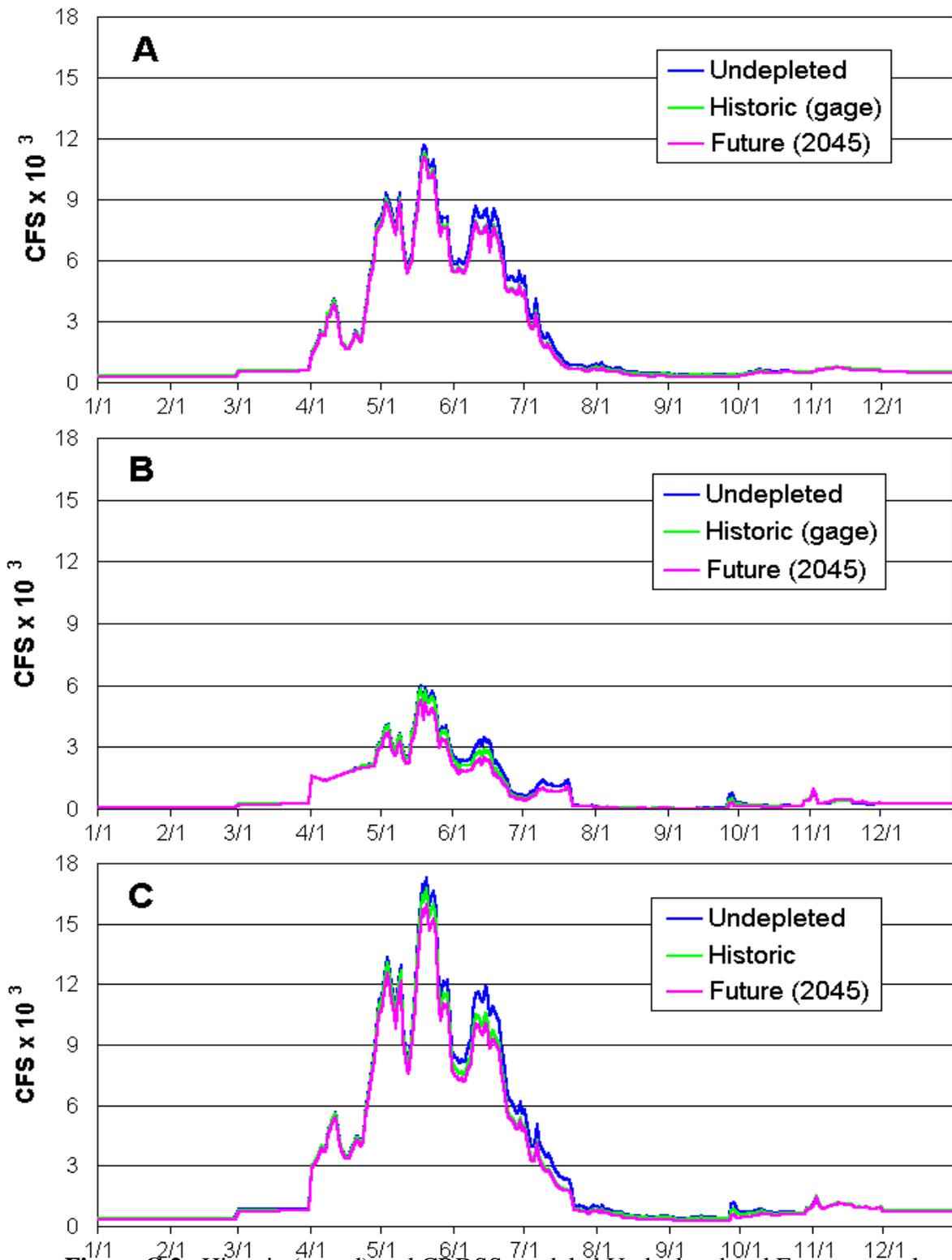


Figure C 2. Historic (gaged) and CRDSS-modeled Undepleted and Future annual hydrographs at A) Maybell, B) Lily Park and C) Deerlodge Park during 1927, a median moderately wet year (20% exceedance)

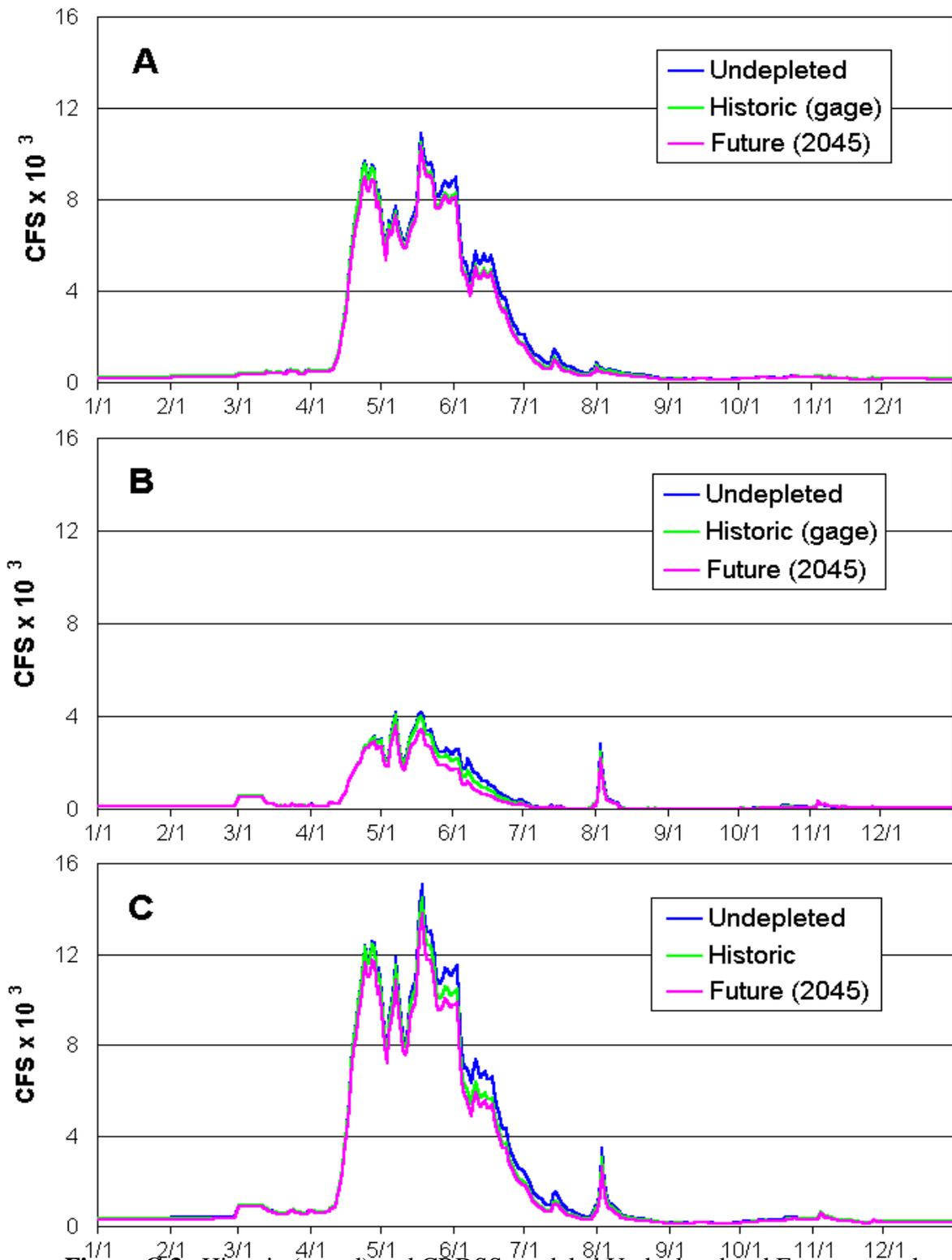


Figure C 3. Historic (gaged) and CRDSS-modeled Undepleted and Future annual hydrographs at A) Maybell, B) Lily Park and C) Deerlodge Park during 1936, a median average year (50% exceedance)

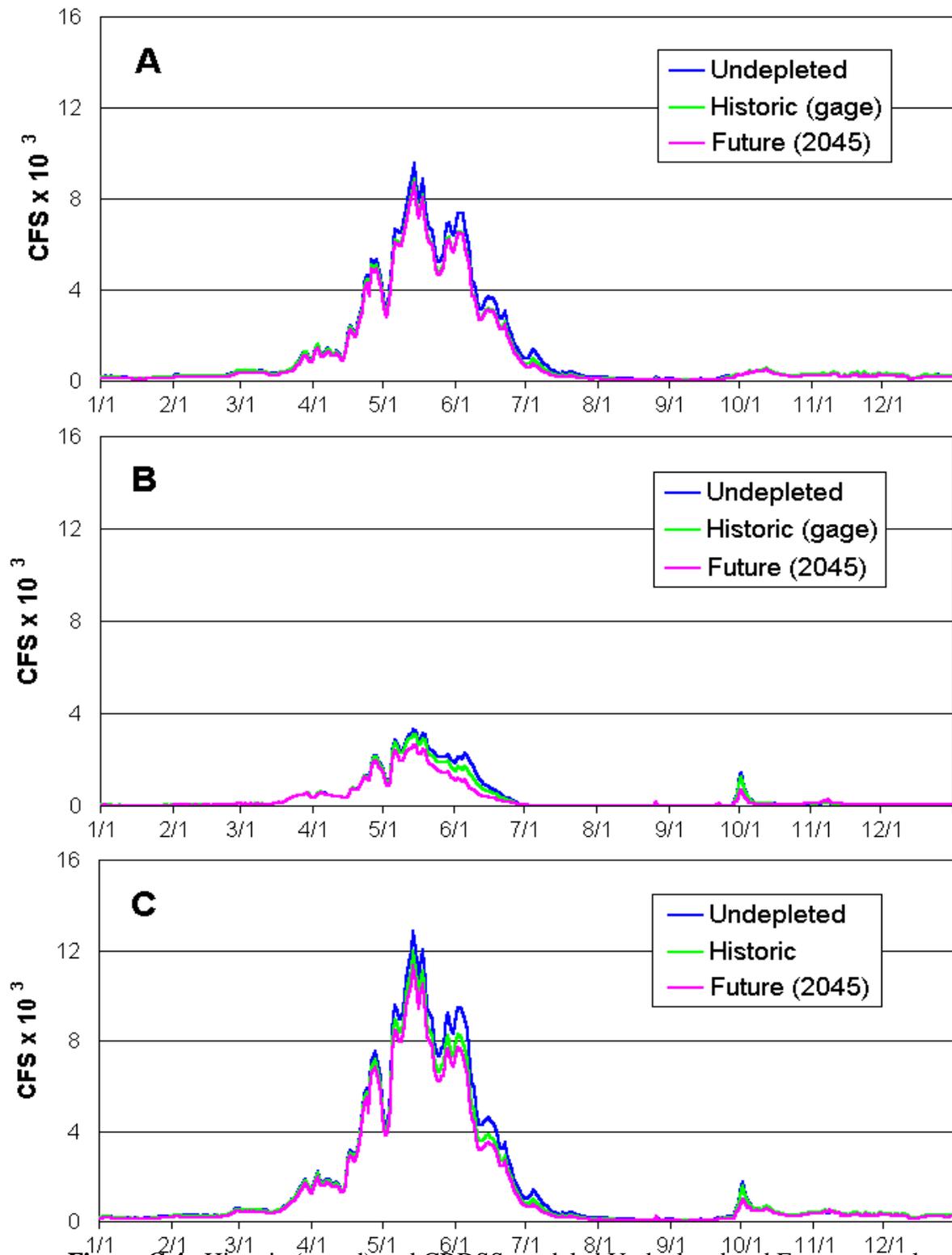


Figure C 4. Historic (gaged) and CRDSS-modeled Undepleted and Future annual hydrographs at A) Maybell, B) Lily Park and C) Deerlodge Park during 1940, a median moderately dry year (80% exceedance)

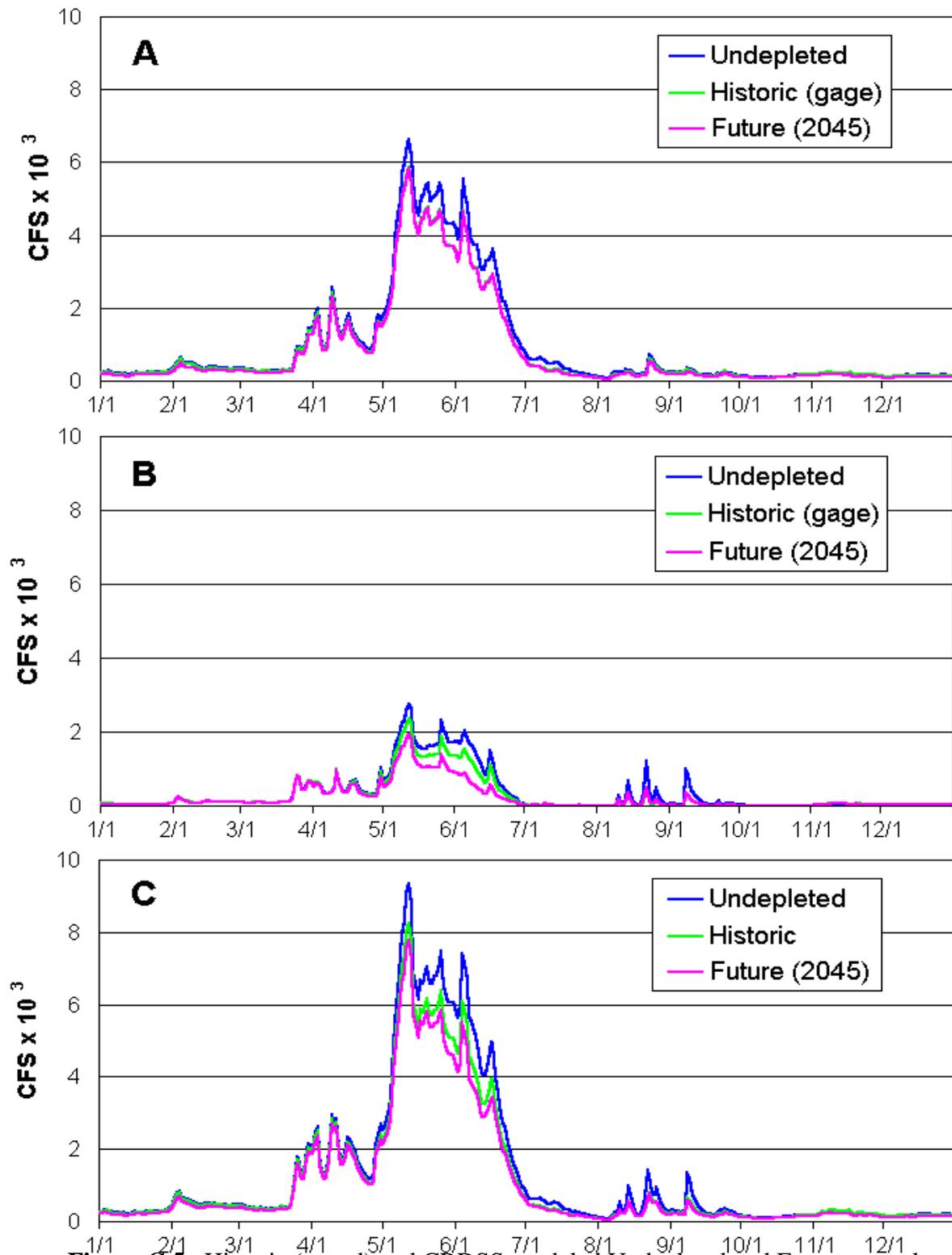


Figure C 5. Historic (gaged) and CRDSS-modeled Undepleted and Future annual hydrographs at A) Maybell, B) Lily Park and C) Deerlodge Park during 1963, a median dry year (95% exceedance)

Table C1. Historic and simulated Undepleted and Future average annual discharges and average peak flows for each of five hydrologic categories at Maybell, Lily Park and Deerlodge Park, Colorado, and Jensen, Utah

	Hydrologic Category (N) ^a	Average annual discharge by Hydrologic Category							Average peak flow by Hydrologic Category						
		Undepl.	Historic			Future (2045)			Undepl.	Historic			Future (2045)		
		KAF	KAF	ΔKAF	Δ%	KAF	ΔKAF	Δ%	cfs	cfs	Δcfs	Δ%	cfs	Δcfs	Δ%
Maybell	Wet (8)	1,885	1,790	-95	-5%	1,753	-132	-7%	15,714	15,050	-664	-4%	14,973	-741	-5%
	Mod. wet (15)	1,485	1,388	-97	-7%	1,347	-138	-9%	12,499	11,827	-672	-5%	11,709	-790	-6%
	Average (30)	1,150	1,062	-88	-8%	1,021	-129	-11%	10,609	9,856	-753	-7%	9,700	-909	-9%
	Mod. dry (15)	893	805	-88	-10%	768	-125	-14%	8,293	7,565	-728	-9%	7,434	-859	-10%
	Dry (8)	612	518	-94	-15%	494	-118	-19%	6,423	4,998	-1,425	-22%	4,933	-1,490	-23%
	Wgt.average (76)	1,194	1,102	-92	-8%	1,065	-129	-11%	10,617	9,818	-799	-8%	9,699	-918	-9%
Lily Park	Wet (8)	697	657	-40	-6%	619	-78	-11%	7,140	6,749	-391	-5%	6,296	-844	-12%
	Mod. wet (15)	577	542	-35	-6%	501	-76	-13%	6,500	6,214	-286	-4%	5,704	-796	-12%
	Average (30)	434	402	-32	-7%	362	-72	-17%	5,162	4,758	-404	-8%	4,222	-940	-18%
	Mod. dry (15)	284	251	-33	-12%	217	-67	-24%	3,355	2,919	-436	-13%	2,558	-797	-24%
	Dry (8)	190	156	-34	-18%	133	-57	-30%	2,571	2,047	-524	-20%	1,756	-815	-32%
	Wgt.average (76)	435	400	-34	-8%	364	-71	-16%	4,968	4,572	-396	-8%	4,128	-841	-17%
Deerlodge Park ^b	Wet (8)	2,582	2,447	-135	-5%	2,372	-210	-8%	22,542	21,534	-1,008	-4%	21,014	-1,528	-7%
	Mod. wet (15)	2,062	1,930	-132	-6%	1,849	-213	-10%	18,521	17,543	-978	-5%	16,927	-1,594	-9%
	Average (30)	1,584	1,464	-120	-8%	1,383	-201	-13%	15,323	14,225	-1,098	-7%	13,486	-1,837	-12%
	Mod. dry (15)	1,177	1,056	-121	-10%	985	-192	-16%	11,551	10,227	-1,324	-11%	9,704	-1,847	-16%
	Dry (8)	802	674	-128	-16%	627	-175	-22%	8,017	6,632	-1,385	-17%	6,126	-1,891	-24%
	Wgt.average (76)	1,629	1,503	-126	-8%	1,429	-200	-12%	15,169	14,020	-1,149	-8%	13,422	-1,747	-12%
Jensen ^c	Wet (3)	5,376	5,231	-145	-3%	5,159	-217	-4%	29,894	28,605	-1,289	-4%	28,159	-1,735	-6%
	Mod. wet (7)	3,829	3,666	-163	-4%	3,597	-232	-6%	20,649	19,770	-879	-4%	19,285	-1,364	-7%
	Average (14)	3,296	3,140	-156	-5%	3,067	-229	-7%	19,592	18,313	-1,279	-7%	17,770	-1,822	-9%
	Mod. dry (7)	2,346	2,166	-180	-8%	2,114	-232	-10%	12,809	11,486	-1,323	-10%	11,127	-1,682	-13%
	Dry (3)	1,915	1,730	-185	-10%	1,685	-230	-12%	11,365	9,594	-1,771	-16%	9,213	-2,152	-19%
	Wgt.average (34)	3,279	3,113	-166	-5%	3,050	-229	-7%	18,420	17,167	-1,253	-7%	16,717	-1,703	-9%

^a Based on a statistical distribution of synthesized undepleted annual discharges at Deerlodge Park^b (1922–1997), except Jensen for which synthesized post-Flaming Gorge undepleted annual discharges (1964–1997) were used.

^b Average annual discharges at Deerlodge Park equal the sums of CRDSS annual discharges at Maybell and Lily Park. However, peak flows do not equal Maybell plus Lily Park peaks, because their respective peaks do not always occur on the same day(s).

^c Average annual discharges at Jensen equal the sums of Deerlodge Park^b and Greendale gaged flows, limited to the 34-year period after the initial filling of Flaming Gorge Reservoir (1964–1997). However, these data are not comparable with Deerlodge Park data above, because they are based on fewer years that are not normally distributed with respect to the longer period of Deerlodge Park.

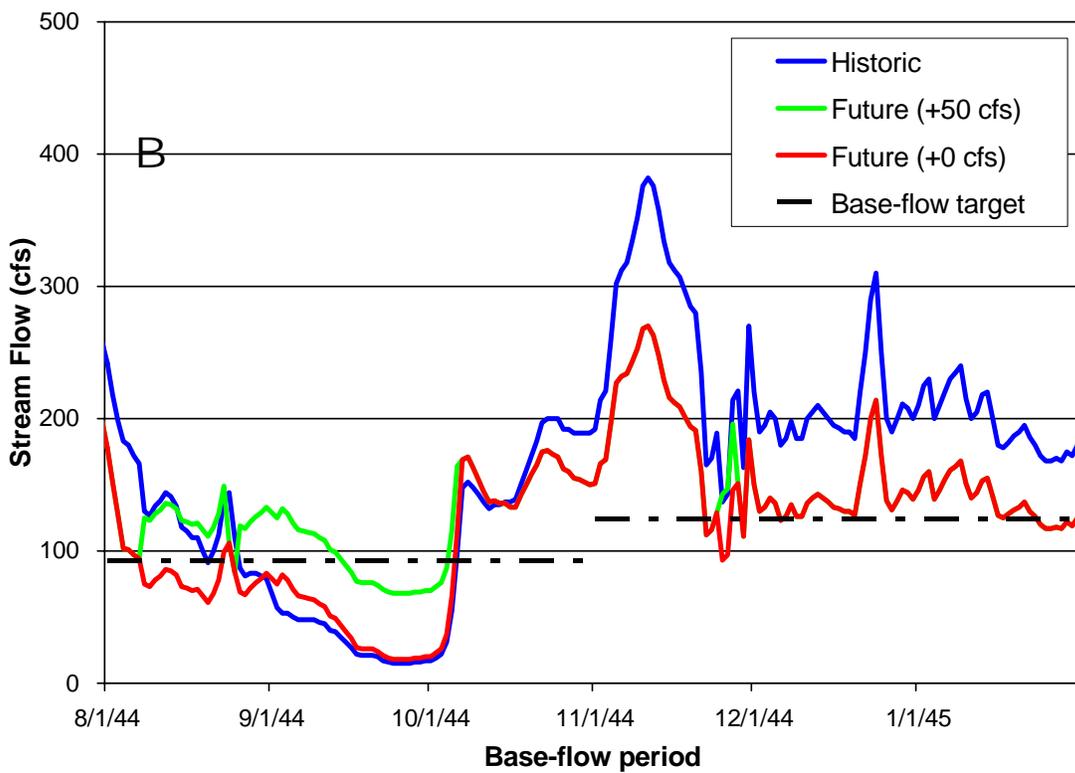
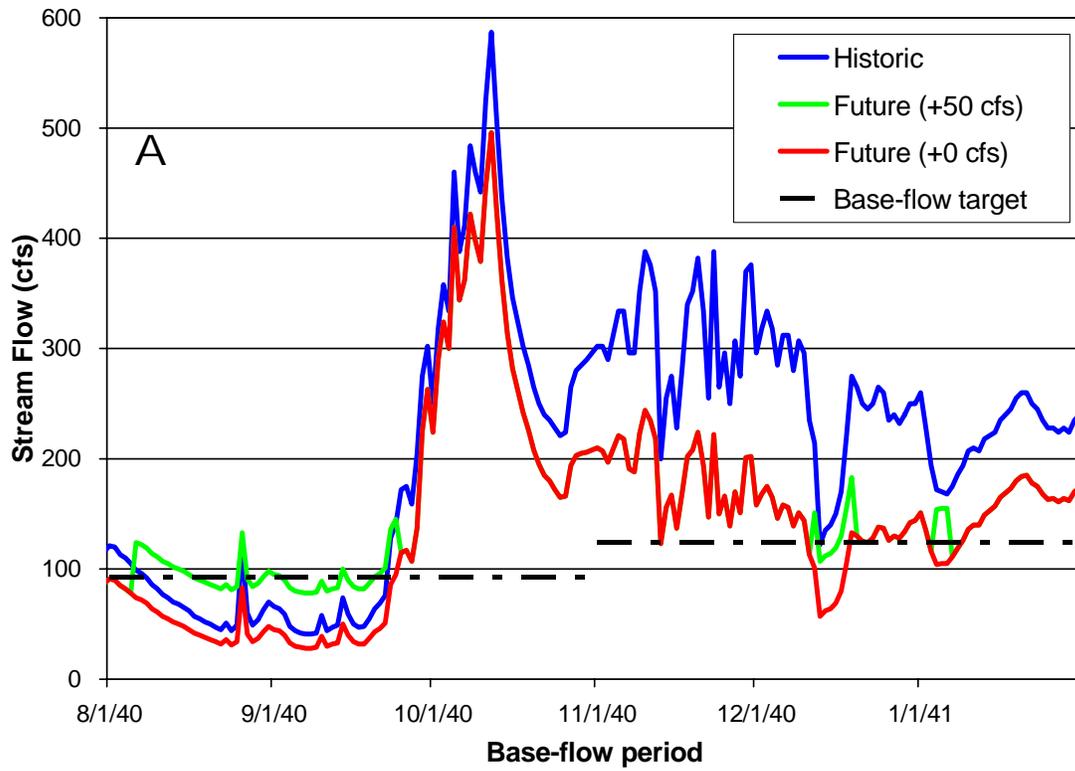


Figure C 6. Base-flow hydrographs during two moderately dry years (A: 1940–41; B:

1944–49, augmented at 50 cfs and not limited by water supply

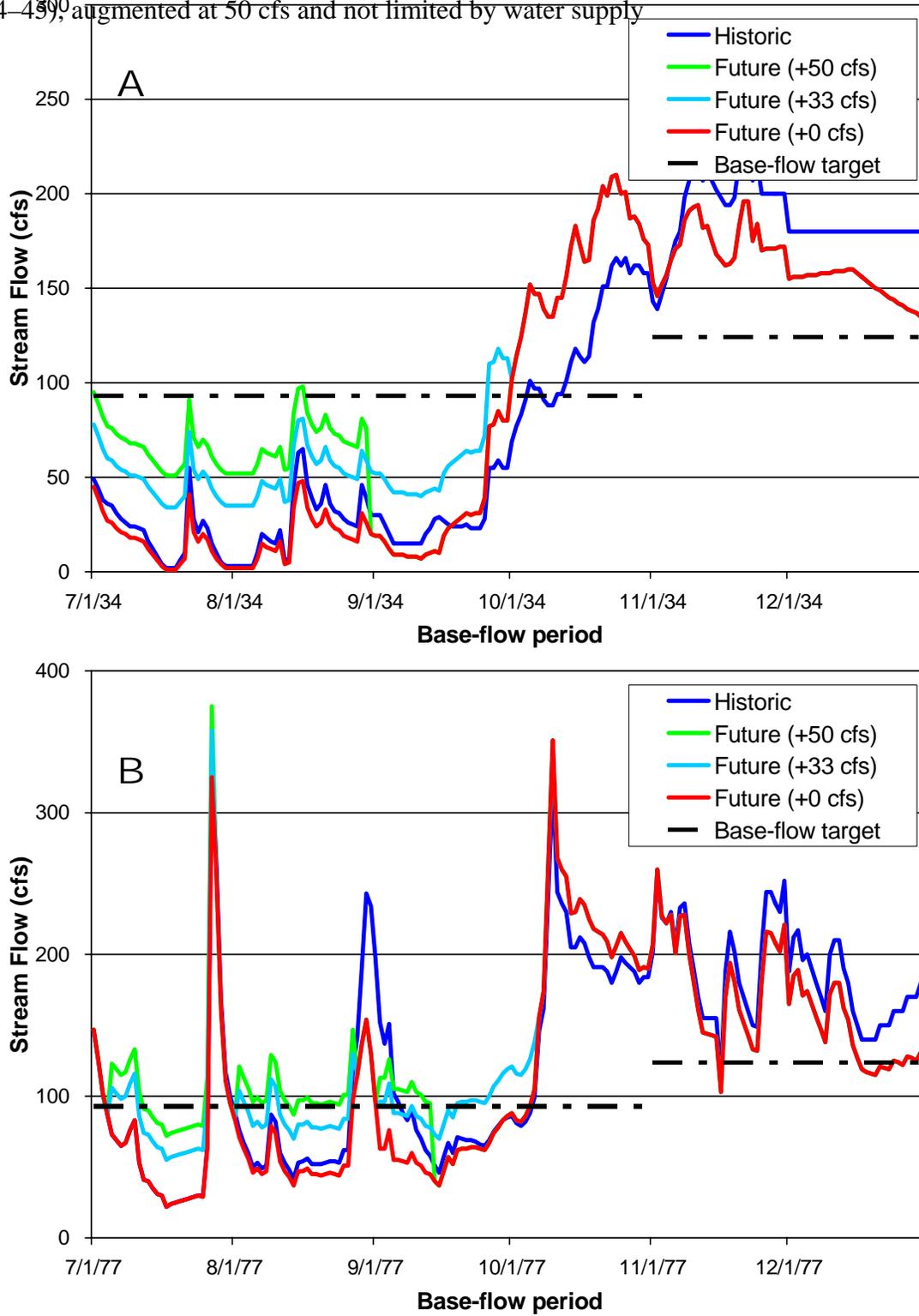


Figure C 7. Base-flow hydrographs for two extremely dry years (A: 1934–35; B: 1977–78), where the duration of augmentation is supply-limited at 50 cfs but not at 33 cfs

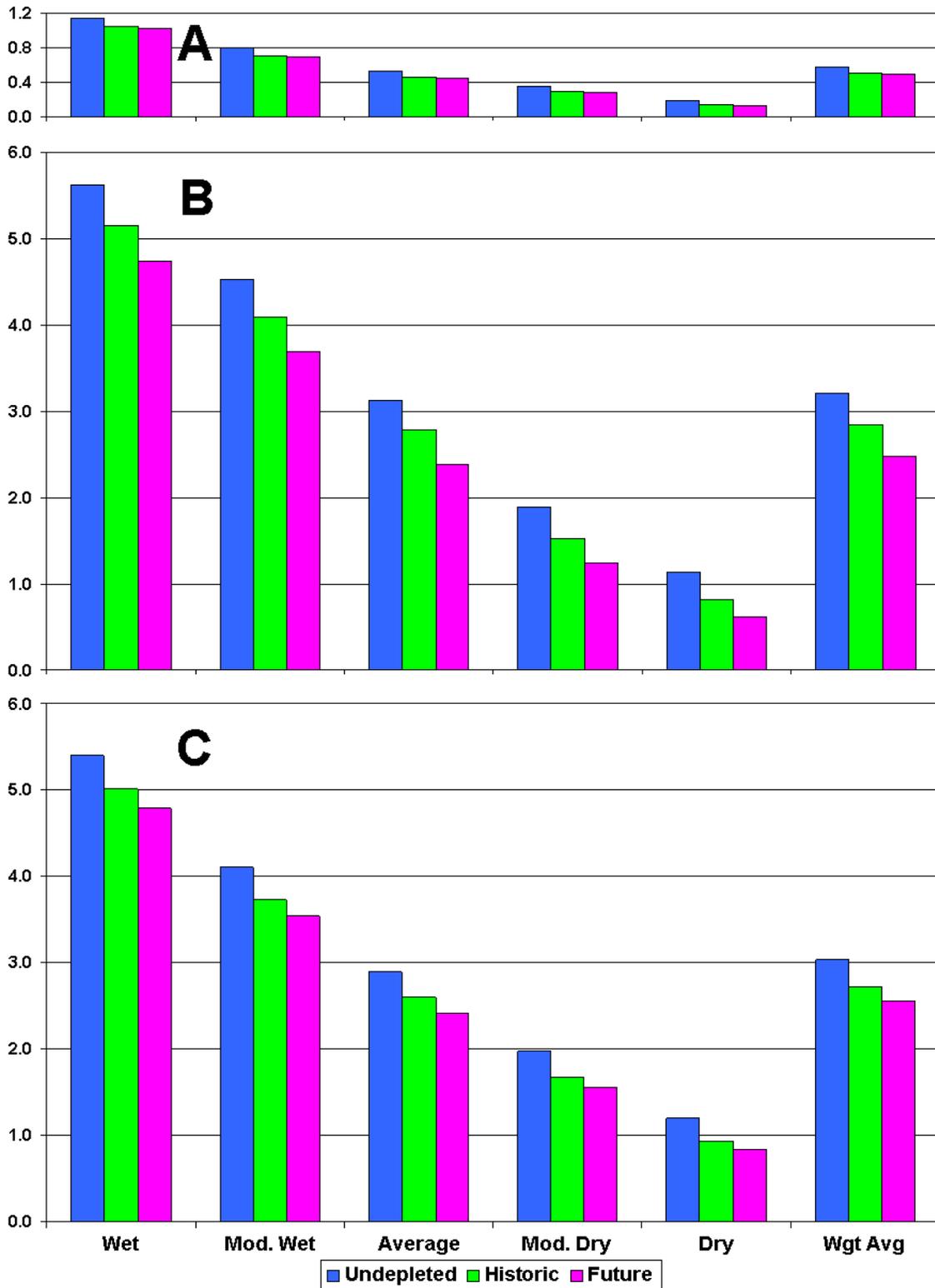


Figure C 8. Average annual suspended sediment for each of five hydrologic categories and long-term weighted average at A) Maybell, B) Lily Park and C) Deerlodge Park under Undepleted, Historic and Future demand conditions.