

# Appendix H

## Historical and Current Water Budgets

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## Appendix H-1

# Historical and Current Annual Surface Water Budget

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Historic and Current Annual  
Surface Water Budget

Water Year	Type	Inflows			Outflows	
		Santa Clara River (into Piru)	Piru Creek	Hopper Creek	Santa Clara River (to Fillmore)	Unaccounted Flows
1988	Dry	31,121	24,056	1,577	-12,169	-44,584
1989	Dry	33,207	10,531	405	-8,510	-35,634
1990	Critical	24,200	5,255	451	-746	-29,160
1991	Dry	33,784	13,102	4,121	-21,423	-29,584
1992	Wet	68,769	54,387	6,775	-67,169	-62,762
1993	Wet	149,946	155,970	17,562	-229,354	-94,123
1994	Above Normal	32,640	53,158	3,789	-36,368	-53,219
1995	Wet	83,720	95,951	20,935	-117,371	-83,236
1996	Above Normal	45,040	32,846	2,094	-28,796	-51,185
1997	Below Normal	38,677	37,268	3,128	-21,928	-57,145
1998	Wet	204,517	104,939	34,049	-259,158	-84,347
1999	Wet	42,149	47,220	1,521	-29,933	-60,957
2000	Dry	44,344	33,294	3,121	-27,837	-52,921
2001	Above Normal	33,741	65,512	6,635	-48,454	-57,433
2002	Critical	23,870	52,568	694	-32,596	-44,537
2003	Below Normal	35,399	24,720	1,655	-16,717	-45,056
2004	Below Normal	34,637	11,778	1,781	-9,106	-39,090
2005	Wet	274,323	191,371	48,240	-400,598	-113,335
2006	Wet	70,342	41,373	5,170	-49,941	-66,945
2007	Critical	27,760	39,930	398	-23,382	-44,706
2008	Critical	56,718	42,226	9,435	-43,937	-64,442
2009	Below Normal	39,910	40,338	1,165	-30,248	-51,164
2010	Above Normal	54,203	26,861	1,987	-23,114	-59,937
2011	Wet	69,946	42,043	6,674	-48,170	-70,493
2012	Below Normal	31,714	40,054	681	-24,437	-48,011
2013	Critical	23,321	22,776	95	-12,222	-33,970
2014	Critical	20,669	6,512	1,799	-3,007	-25,973
2015	Critical	25,352	6,366	391	-3,522	-28,588
2016	Critical	17,361	5,889	1,139	-2,012	-22,378
2017	Below Normal	59,056	28,027	9,903	-35,899	-61,087
2018	Dry	17,246	6,406	202	-1,013	-22,840
2019	Above Normal	60,788	49,994	6,101	-47,834	-69,049

## Notes:

- Flows are in acre-feet/year (AFY), based on values from United (2021a).
- Water year types are based on those provided by DWR (2018a).

## Appendix H-2

# Historical and Current Annual Groundwater Budget

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Water Year	Type	Inflows					Outflows			Annual Cumulative		Annual Cumulative	
		Stream Percolation	Recharge (Basin Floor)	Recharge (Mountain Front)	Underflow (from SCRVE)	Underflow from Outside	Underflow to Fillmore	Wells	Evapo-transpiration (ET)	Change in Groundwater in Storage		Error	
1988	Dry	40,127	8,252	5,329	5,010	0	-43,245	-12,760	-3,575	-866	-866	-3	-3
1989	Dry	33,606	6,436	3,042	4,997	0	-43,140	-13,890	-2,741	-11,692	-12,559	-2	-5
1990	Critical	27,070	6,615	1,580	4,997	0	-39,774	-15,810	-2,471	-17,794	-30,353	-1	-6
1991	Dry	26,737	9,271	5,768	4,997	0	-35,280	-17,501	-2,776	-8,789	-39,142	-4	-10
1992	Wet	55,840	20,020	9,677	5,010	0	-40,111	-13,155	-3,377	33,899	-5,244	-5	-15
1993	Wet	73,461	26,560	12,531	4,997	3	-52,296	-10,711	-7,791	46,747	41,503	-7	-21
1994	Above Normal	37,500	12,939	2,881	4,997	0	-53,385	-12,730	-7,806	-15,608	25,895	-5	-26
1995	Wet	47,712	21,971	10,643	4,997	4	-51,178	-9,676	-8,125	16,342	42,237	-6	-32
1996	Above Normal	40,493	7,792	4,408	5,010	0	-52,531	-14,319	-7,558	-16,708	25,529	-4	-36
1997	Below Normal	46,619	9,401	6,093	4,997	0	-50,855	-11,607	-5,897	-1,256	24,273	-5	-41
1998	Wet	49,443	21,862	15,859	4,997	2	-52,891	-8,356	-10,258	20,644	44,917	-13	-55
1999	Wet	45,649	6,968	2,053	4,997	0	-53,107	-12,435	-8,605	-14,486	30,431	-5	-60
2000	Dry	43,225	8,162	4,734	5,010	0	-50,978	-13,120	-4,989	-7,961	22,470	-6	-65
2001	Above Normal	42,737	11,797	7,091	4,997	0	-50,476	-11,199	-4,767	174	22,644	-6	-71
2002	Critical	35,727	6,149	1,597	4,997	0	-48,492	-11,452	-3,745	-15,224	7,420	-5	-76
2003	Below Normal	39,701	9,263	6,640	4,997	0	-45,346	-10,086	-3,916	1,247	8,667	-6	-82
2004	Below Normal	33,791	6,557	3,137	5,010	0	-45,357	-11,931	-3,508	-12,305	-3,639	-4	-86
2005	Wet	76,223	18,620	15,450	4,997	3	-48,644	-9,510	-8,415	48,717	45,078	-7	-93
2006	Wet	49,722	11,171	6,707	4,997	0	-53,935	-11,602	-11,152	-4,098	40,981	-5	-98
2007	Critical	36,018	4,264	646	4,997	0	-50,055	-13,993	-5,185	-23,312	17,668	-4	-102
2008	Critical	55,285	8,629	5,937	5,010	0	-50,217	-14,193	-4,616	5,831	23,499	-4	-106
2009	Below Normal	45,826	6,239	3,488	4,997	0	-50,836	-12,421	-4,417	-7,129	16,370	-4	-110
2010	Above Normal	52,382	9,266	6,945	4,997	0	-51,404	-12,013	-5,373	4,795	21,165	-5	-115
2011	Wet	55,861	10,371	7,867	4,997	0	-52,098	-10,646	-7,191	9,155	30,320	-7	-121
2012	Below Normal	37,214	6,465	2,687	5,010	0	-49,848	-11,767	-4,547	-14,789	15,531	-3	-125
2013	Critical	24,805	5,475	1,139	4,997	0	-45,119	-12,189	-3,302	-24,197	-8,665	-2	-127
2014	Critical	21,525	5,651	1,799	4,997	0	-39,154	-14,526	-2,504	-22,215	-30,880	-2	-129
2015	Critical	26,421	5,421	2,361	4,997	0	-34,095	-12,553	-2,531	-9,984	-40,863	-3	-132
2016	Critical	18,886	6,070	2,563	5,010	0	-31,342	-14,481	-2,533	-15,831	-56,694	-4	-135
2017	Below Normal	56,583	9,401	7,759	4,997	0	-31,642	-10,660	-3,381	33,050	-23,645	-6	-141
2018	Dry	19,944	5,714	2,778	4,997	0	-35,765	-12,841	-2,665	-17,842	-41,487	-5	-146
2019	Above Normal	69,117	9,081	7,506	4,997	0	-36,002	-10,782	-3,511	40,402	-1,085	-4	-150

Notes:  
 - Flows are in acre-feet/year (AFY) from the United Water Conservation District Ventura Regional Groundwater Flow Model (United, 2021a).  
 - Water year types are provided by DWR; water year type for 2019 was determined based on DWR (2021).