

APPENDIX 1 – LISTING OF OBSERVED WATER-YEAR AVERAGE FLOWS

This appendix lists observed flows used to calibrate tree-ring reconstruction models. Calibration series are 1) Salt+Verde+Tonto, 2) Salt +Tonto, 3) Verde, and 4) Gila. Gaged data for building those series, as monthly mean cfs, were downloaded the USGS and converted to water-year-average flow. Monthly data for 2006 and 2007 were provided by Mark Hubble (Water Resource Operations, Salt River Project) on October 2, 2007. Those were preliminary data at the time.

These USGS gage records were used:

Salt: 09498500, nr Roosevelt

Tonto: 09499500, nr Roosevelt; 09499000 abv Gun Creek starting with Jan 1941

Verde: 09510000, blw Bartlett Dam; 09508500 blw Tangle Creek, abv Horseshoe Dam starting with Sept 1945

Salt + Verde + Tonto and Salt + Tonto are the arithmetic sums of the flows at the individual gages listed above

Gila: 09448500, at head of Safford Valley, nr Solomon. To obtain a continuous series of water-year (WY)flow back to water year 1916, the following steps were taken: (1) 1915-20, 1934 and 1949 water-year (WY) totals estimated by simple linear regression on Gila River nr Solomon, (2) 1934 WY total estimated by simple linear regression on sum of WY totals at Gila R. nr Redrock and San Francisco R. nr Glenwood (regression on log-transformed flows), (3) October 1934 through April 1935 total estimated from sum of the mean daily flows of Gila R. nr Redrock and San Francisco R. nr Glenwood

Salt + Verde + Tonto

Observed average daily flows for water year in cfs

1914	NaN	NaN	NaN	NaN	1279	3665	5317	2361	1236	2118
1920	4348	1182	2033	1588	2000	817	1795	2455	869	1191
1930	1099	1440	3071	958	580	1861	1348	2585	1153	873
1940	756	4721	1248	1213	1166	1275	765	729	1004	1832
1950	635	675	2802	679	940	681	493	1114	1777	623
1960	2015	488	1528	853	751	2036	2639	893	2175	1476
1970	879	537	960	4822	547	1300	1118	512	3292	4585
1980	4049	741	1863	3599	1717	2992	1450	1596	1699	656
1990	562	2364	2279	6020	952	2788	477	940	1845	674
2007	403	1068	387	1072	615	3377	658	635	NaN	NaN

Salt + Tonto

Observed average daily flows for water year in cfs

1914	NaN	NaN	NaN	NaN	733	2462	3558	1128	546	1369
1920	2603	754	951	846	1245	453	1087	1325	437	652
1930	704	883	1921	654	353	1163	952	1454	551	527
1940	427	3133	841	822	562	778	469	457	679	1145
1950	307	384	1942	406	537	387	304	626	1141	374
1960	1471	261	1084	604	416	1203	1746	434	1522	843
1970	495	309	642	3114	315	926	578	290	2012	3190
1980	2443	471	1059	2294	1225	2266	944	1111	1069	409
1990	304	1725	1453	3791	621	1752	251	611	1082	389
2007	203	707	210	693	390	1766	445	426	NaN	NaN

Verde

Observed average daily flows for water year in cfs

1905	NaN	NaN	NaN	NaN	NaN	2167	1246	1188	628	1054
1910	NaN	NaN	NaN	NaN	546	1202	1759	1233	690	749
1920	1744	428	1082	742	754	364	708	1130	432	539
1930	396	557	1150	303	227	698	396	1131	602	345
1940	329	1588	406	391	604	497	297	272	325	687
1950	328	291	859	272	403	294	189	488	636	249
1960	544	227	443	249	334	834	892	458	653	633
1970	384	228	318	1709	233	373	540	222	1280	1394
1980	1606	270	804	1306	492	726	506	485	631	247
1990	258	639	826	2229	331	1036	226	329	762	286
2007	200	361	177	378	225	1611	212	209	NaN	NaN

Gila at head of Safford Valley

Observed average daily flows for water year in cfs

1915	NaN	NaN	NaN	NaN	NaN	2171	1776	833	176	698
1920	679	416	188	456	540	293	464	408	239	327
1930	346	460	698	344	192	264	301	583	236	205
1940	318	1226	471	212	191	313	162	157	175	804
1950	132	101	455	125	245	222	102	294	622	243
1960	440	125	614	395	225	254	888	302	980	169
1970	153	135	347	1413	128	482	224	177	457	1683
1980	616	198	302	1071	996	1266	571	536	590	222
1990	171	872	1117	2229	206	1196	227	465	504	286
2006	133	595	141	172	223	888	451	NaN	NaN	NaN