

IDAHO STATE HISTORICAL SOCIETY

REFERENCE SERIES

BOISE RIVER: HIGH-WATER YEARS OF THE PAST

Number 879

Based on a report by William E. Welsh, Watermaster, June 26, 1944.

The following statement contains information indicating that before 1895, when the first records of flow of the Boise River were kept, there were several exceedingly high-water years in which floods of catastrophic proportions occurred. This information is based upon precipitation records for the town of Boise, which dates back to 1864, and on statements and stories told by early settlers and old-timers, living along the Boise River, who had witnessed many of these floods.

Attached to the statement are tabulations showing the precipitation records by month for the town of Boise for the years discussed, as well as 1896 and 1943, which were two of the highest-water years of record; and a table showing the date and quantity (in second feet) of maximum runoff in the Boise River between 1895 and 1943.

It is known that the relationship between precipitation at Boise and precipitation over the Boise watershed is not a constant one; however, Boise is the only station from which records are available dating back to the period for which these records are desired. A notable example of the discrepancy is 1943, when the precipitation over the Boise River watershed was relatively much heavier than that for the city of Boise.

It will be noted that there are a few years of unusually heavy precipitation that were not reported by the early settlers as high-water years on the Boise River: for example 1872 and 1874. However, every year of heavy precipitation is not necessarily a flood year, the greatest single influence on flooding being the weather conditions during the spring months.

Precipitation records for the city of Boise, when considered with statements made by early settlers along the Boise River and information from other sources, indicate that on several occasions during the early years of settlement along the river, the flow of the river was much greater than at any time during the past forty-nine years of record [to 1944]. It will be seen from the tabulation of river flow that the highest flow of record occurred on June 14, 1896, when the river reached 35,500 second feet. Available information from various sources seems to indicate that there were several years, at least one in each decade prior to 1896, in which the flow exceeded that of June 14,

1896.

1894. It is my understanding that 1894 was a high-water year throughout the northwest area. Old-timers on the Payette River and the Upper Snake River have so indicated. However, I have talked to only two men who have mentioned 1894 as a high-water year on the Boise. Mark Carlyle, who lives across the river from and about one mile west of Parma, insists every time I talk with him that the flow in 1894 was considerably higher than that of 1896. John McGrath, former sheriff of Ada County, moved into his home in the fall of 1894. He said that the high-water marks of that spring were still plain and easily followed. They indicated, he said, that 1894 was a year of considerably higher flow than 1896: that the water had stood around his house and barn. Precipitation records for the town of Boise do not indicate that 1894 was one of our extremely high years, but it is possible that weather--especially high temperatures--during the spring months could have caused a quick, flashy runoff.

1884. Precipitation records for Boise indicate that 1884 was an unusually high-water year. This is confirmed by stories from early settlers. A. J. Wiley, now deceased, who formerly resided in Boise and who enjoyed a worldwide reputation as a consulting engineer, made the statement to W. H. Tuller, project manager of the Boise Project, that 1884 was the highest year he had known on the Boise River. During the spring of 1884 Wiley was working on the river where the present Barber Dam is located above Boise. William Siebenberg, now deceased, who lived on the right bank of the Boise River about three miles west of Caldwell, also stated that 1884 was the highest year that he remembered, higher considerably than any of the years in the '90's. He remembered 1884 particularly because the railroad was built through Caldwell that year.

Jeff Shelton, now deceased, who lived at the east edge of the village of Star, also told W. G. Steward, former assistant engineer of the U.S. Bureau of Reclamation and instructor at the University of Idaho, and the writer, that he especially remembered 1884 as being a year of unusually high water.

1871. The precipitation records for the town of Boise indicate that 1871 was the year of highest precipitation since records were started in 1864. W. G. Steward, in his report entitled "Possibility of Flood Damage Along the Boise River Between Diversion Dam and Snake River," says:

The rainfall records taken at Boise in 1871 would indicate that the flood of that year could easily have been twice the 1896 discharge and possibly three times as great. Computations made from the 1871 precipitation records indicate that the total runoff for that year would have been about 5,500,000 acre feet.

Jeff Shelton also said that there was a year in the early 1870's when he traveled by rowboat from the foot of the hill at the Star cemetery across the valley lands and across the present Highway 44 and tied his rowboat to the porch of the Swalley house, one-half mile above Star. Swalley stated that the only land not under water in that section was the ridge on which his house stood. John Lankford, who lives about one-and-one-half miles west of Star near the bank of the river, said that in 1871 the river broke through near the Canyon County Water Company headgate and covered practically all of the bottom lands from there to Middleton. Former Governor C. Ben Ross, who was born and raised on the farm where he now resides across the river from the village of Parma, says that his father always talked about 1871 as being the highest high-water year.

1862. While precipitation records for the town of Boise date back only to 1864, indications from old-timers' stories are that the flow in 1862 probably exceeded the high water of any year since that time. I. N. Coston, who . . . homesteaded on a ranch located near the present site of Barber, came to the Boise Valley in 1862. He stated that all land in the river bottoms extending from bluff to bluff and from the present site of Boise westward to the canyon near the present site of Caldwell was completely under water on the 4th of July that year. Jeff Shelton accompanied W. G. Steward and the writer down to Canada Lane, a mile west of Star and then north more than one-half mile from Highway 44 to show us a ridge where a log was found by the first settlers of the Boise Valley (who came in 1864); all were of the opinion that the only way this log could have gotten there was to have floated in by high water from the Boise River.

Fred McConnell, now deceased, a civil engineer and graduate of the University of Idaho, who was born on McConnell Island near the mouth of the river and who spent his life in engineering practice in Canyon County, was a profound student of the Boise River and the various problems involved. He was firmly convinced that there was extremely high water many times during the early days of settlement of the valley; and as further indication of the high water in 1862, he stated to me that his father was with the first emigrant train to travel from the Boise Valley to the Payette Valley, making the descent into Payette Valley on the ridge to the east of Freezeout Hill, as indicated by the monument by the side of the highway. Before starting on the trek across the desert between the two valleys, the party camped north of but near the present town of Eagle, close to Dry Creek and near the bluff, for about three weeks. All the time they were camped there, they burned driftwood which they all believed to have come from high water from the Boise River. This was in the fall of 1862; the party while camped there was visited by the Grimes party, who were returning from the Boise Basin after the

discovery of gold on what is now Grimes Creek. An interesting sidelight to this story is the fact that the Grimes party debated the advisability of telling the McConnell party about the discovery of gold in the Boise Basin and decided not to tell it, because there were so many in the McConnell party. However, like all stories of gold discovery in those early days, someone did tell it, and news spread with the resultant gold rush to the basin in the following spring of 1863.

In the National Research Council, American Geophysical Union Transactions of 1941, prepared by the National Research Council of the National Academy of Sciences, Washington, D.C., 1941, there is an article entitled "A Hundred-Year Record of Truckee River Runoff Estimated from Changes in Levels and Volumes of Pyramid and Winnemucca Lakes," by George Herdman and Cruz Venstrom. On page 74 is found this statement: "One of the greatest floods in the history of Nevada occurred in 1861-62." On Pages 85 and 86 is a table showing for the period 1839-40 to 1929-30, among other things, a Truckee River Basin precipitation index which shows an index for 1861-62 of 215, considerably the highest shown for any year. On page 88 is a graph showing the estimated runoff of Truckee River, also with 1862 as the highest year of record.

I also have a tracing prepared by Lynn Crandall, Idaho Falls, showing the annual flow into Great Salt Lake. Although this does not show 1862 as the highest year of record, it shows it as one of the highest, exceeded only by 1868, 1864, and 1907.

The information from these two sources does seem to indicate that 1862 was a year of unusually high runoff throughout the entire intermountain area, thus confirming the statements of the early settlers along the Boise River. In fact, there is little doubt in my mind that the flood of 1862 was at least four times the amount of the flood of 1943 and probably much greater [100,000 second feet or greater].

1868. In Addition to the foregoing statements from early settlers along the river relative to high-water years, it was thought that it might also be interesting to students of Boise River runoff to know that there was a year of extreme storage during the late '60's. Mr. and Mrs. Swalley moved to their homestead as bride and groom in the early '60's, either 1864 or 1865, and continued to live there until their deaths a few years ago. Swalley stated to W. G. Steward that there was a year in the late '60's in which the river flow was so low during the summer months that it was possible for a person to wade across the rocks and not get his ankles wet. Swalley stated that at that time there was only one ditch of any consequence taking water out of the river above his farm. Swalley could not remember the exact year but the precipitation for the city of Boise was only 3.52 inches for the year 1868--which was less than one-half the precipitation in Boise for the short-water year of

1924, which was our shortest year of record.

Anton Diederichsen, who lives about two miles above Payette on the north side of the river on a slough about a mile from the main channel of the river, stated to F. A. Tolman, field engineer, State Department of Reclamation, on August 26, 1947, that he had been on the place since 1891, and that in 1894 they had normal high water in March but that the real high river stage lasted from June into July, and that the preceding snow in Long Valley was fifteen feet deep on the level. That runoff cut the river channel four feet deeper.

Precipitation records for the city of Boise for a few of the extremely high water years, and for the period from October 1 to September 30 of each following year.

	<u>1871</u>	<u>1884</u>	<u>1894</u>	<u>1896</u>	<u>1943</u>
October	.24	4.06	.84	.00	.58
November	2.13	.46	3.14	.71	2.31
December	1.26	2.27	.48	.69	2.75
January	3.54	1.75	2.88	3.72	1.27
February	1.29	1.32	.82	.50	.88
March	7.66	2.78	1.64	2.41	2.08
April	1.54	.78	1.26	2.72	1.39
May	2.75	.92	2.08	4.90	.72
June	.64	3.41	.19	1.36	1.09
July	.14	.60	.00	.10	.16
August	.00	.07	.06	1.06	----
September	<u>.11</u>	<u>2.11</u>	<u>.40</u>	<u>.28</u>	
	21.30	20.53	13.79	18.45	13.23

BOISE RIVER RUNOFF, 1895-1943

<u>Year</u>	<u>Maximum Discharge</u>	<u>Date of Maximum Discharge</u>
1895	7,880	5/6
1896	35,500	6/14

1897	29,500	4/19
1898	6,540	4/26-28
1899	19,000	5/10
1900	11,960	5/12
1901	12,700	5/16
1902	8,190	5/29
1903	16,800	6/2
1904	19,700	4/15
1905	6,260	6/2
1906	8,710	5/12
1907	17,000	4/15
1908	10,600	5/22
1909	16,000	6/5
1910	16,600	3/2
1911	15,100	6/15
1912	15,600	6/9
1913	13,300	5/28
1914	11,300	4/16
1915	6,227	5/19
1916	16,550	5/7
1917	17,848	5/15
1918	12,601	6/14
1919	11,580	5/30
1920	9,623	5/18
1921	19,682	5/18
1922	18,174	5/26
1923	11,950	5/26
1924	5,186	5/18
1925	14,350	5/20
1926	7,094	6/6
1927	20,061	5/18
1928	20,710	5/10
1929	7,518	5/30
1930	7,599	5/30
1931	5,434	5/8
1932	13,580	5/14
1933	12,214	6/16
1934	5,274	4/14
1935	9,501	5/25
1936	19,790	4/24
1937	7,705	5/6
1938	19,283	5/2
1939	8,413	5/1
1940	9,866	5/14
1941	8,861	5/27
1942	10,690	5/27
1943	25,040	4/18

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