

## HISTORICAL FLOOD FLOWS OF THE SKAGIT RIVER<sup>1</sup>

DATE	C.F.S. CONCRETE	RIVER LEVEL	C.F.S. S-W	C.F.S. M.V.	RIVER LEVEL M.V. <sup>2</sup>
1815	500,000 510,000 <sup>3</sup>	69.3	400,000	54.56 (Sedro Woolley (%S-W+)Gage)	
1856	350,000 340,000 <sup>4</sup>	57.3	300,000	51.06 (S-W Gage)	
11/16/1896			185,000	45.86 (S-W Gage)	
11/18/1897	275,000 265,000 <sup>5</sup>	51.1	190,000	45.96 (S-W Gage)	
11/16/06			180,000	180,000 <sup>6</sup>	37.00
11/18/08			97,000	N/A	N/A
11/30/09	260,000 245,000 <sup>7</sup>	49.1	220,000	47.56 (S-W Gage)	
11/21/10			114,000	N/A <sup>8</sup>	N/A
12/30/17	220,000 210,000 <sup>9</sup>	45.7	195,000	N/A	N/A
12/12/21	240,000 228,000 <sup>10</sup>	47.6	210,000	140,000 <sup>11</sup>	N/A
12/12/24	92,500	32.44	N/A	N/A	N/A
10/16/26	88,900	32.03			
1/12/28	95,500	32.90			
10/9/28	74,300	29.94			
02/27/32	147,000	39.99	157,000	N/A	N/A
11/13/32	116,000		125,000	N/A	N/A
12/22/33	101,000	33.60	110,000	N/A	N/A
01/25/35	131,000	37.90		N/A	N/A
06/19/37	68,300	28.97			
10/28/37	89,600	32.16			
5/29/39	79,600	30.70			
12/2/41	76,300	30.17		65,300	25.99
12/3/43	65,200	28.49			
02/8/45	70,800			59,800	25.77
10/25/46	82,200	31.14		64,900	27.80
10/26/45	102,000	34.00	N/A	94,300	30.25
10/19/47	95,200	32.99	N/A	69,400	28.68
11/28/49	154,000	40.8	149,000	114,000	34.21
11/26/50			N/A	68,400	28.19

<sup>1</sup> Pool levels are suppose to be at 1592.1 at Ross and 707.9 ft at Upper Baker Reservoir before the simulation begins.

<sup>2</sup> Authors Note: Flood stage is at 28.0 feet.

<sup>3</sup> Updated figure from USGS Scientific Investigations Report 2007-5159, Re-evaluation of the 1921 Peak Discharge at Skagit River near Concrete, Washington.

<sup>4</sup> Ibid

<sup>5</sup> Ibid

<sup>6</sup> This figure is incorrect. The levees in 1906 could not have held 180,000 cfs. The figure is a typo contained in the 1965 COE report.

<sup>7</sup> Updated figure from USGS Scientific Investigations Report 2007-5159, Re-evaluation of the 1921 Peak Discharge at Skagit River near Concrete, Washington

<sup>8</sup> N/A = Not Available.

<sup>9</sup> Updated figure from USGS Scientific Investigations Report 2007-5159, Re-evaluation of the 1921 Peak Discharge at Skagit River near Concrete, Washington

<sup>10</sup> Ibid.

<sup>11</sup> Extreme difference between Sedro Woolley and Mt. Vernon was due to break in dikes upriver on Burlington side of river. Source: COE report 1/31/25.

DATE	C.F.S. CONCRETE	RIVER LEVEL	C.F.S. S-W	C.F.S. M.V.	RIVER LEVEL M.V. <sup>2</sup>
12/25/50			N/A	74,000	29.08
02/11/51	139,000	38.99	150,000	144,000	36.85
02/1/53	66,000	28.61		65,700	27.76
10/26/55			N/A	84,900	30.69
11/04/55	106,000	34.48	113,000	107,000	33.52
04/30/59	90,700	32.36	92,000	92,300	31.68
11/24/59	89,300	32.17	91,000	91,600	31.58
11/21/60			N/A	70,200	28.51
12/16/60			N/A	70,200	28.51
01/16/61	79,000	30.61	N/A	76,000	29.40
11/20/62	114,000	35.73	N/A	83,200	30.44
10/22/63	73,800	29.80	N/A	N/A	N/A
11/27/63	84,200	31.41	N/A	72,100	28.80
06/22/67	72,300	29.59	N/A	72,000	28.78
10/28/67			N/A	72,700	28.89
01/21/68			N/A	70,900	28.43
06/03/68			N/A	68,800	28.09
01/31/71			N/A	70,300	28.52
07/13/72	91,900	32.54	N/A	80,600	30.07
01/16/74	79,900	30.75	N/A	77,600	29.64
12/4/75	122,000	36.88	N/A	130,000	35.66
12/2/77	70,300	29.27		65,600	27.59
12/19/79	135,000	38.57	N/A	112,000	33.99
12/27/80	148,700	40.19	N/A	114,000	34.16
12/04/82	100,000	33.82	N/A	71,600	28.65
01/05/84	109,000	34.94	N/A	88,200	31.14
01/19/86	93,400	32.75	N/A	72,800	28.84
11/24/86	83,500	31.30	N/A	70,700	28.49
10/16/88	74,100	29.86	N/A	56,700	25.77
11/11/89	119,000	36.39	N/A	88,220	31.14
12/05/89			N/A	95,480	32.39
11/11/90	142,000	40.20	N/A	142,000	36.60
11/24/90	146,000	39.89 <sup>12</sup>	196,000 <sup>13</sup>	152,000	37.37
11/08/95	143,000	39.45	N/A	89,900	31.62 <sup>14</sup>
11/11/95	72,900	29.67	N/A	59,200	26.60
11/14/95	67,700	28.86	N/A	57,100	26.18
11/25/95	63,200	28.11	N/A	61,500	27.03
11/29/95	160,000	41.57	N/A	133,000 <sup>15</sup> 141,000 <sup>16</sup>	37.32
02/09/96	88,900	32.11	N/A	81,800	29.27
03/20/97	74,740	29.96	N/A	74,980	29.52 <sup>17</sup>

<sup>12</sup> Flooding in Western Washington from 21 to 26 November 1990, COE MFR, 11/29/90

<sup>13</sup> INFO OBTAINED FROM COE 1993 RECON STUDY FAX DATED 3/29/93.

<sup>14</sup> Info obtained from USGS

<sup>15</sup> First reported by the COE.

<sup>16</sup> Currently being reported by USGS (10/27/02)

<sup>17</sup> Info obtained from COE Internet Web Site

DATE	C.F.S. CONCRETE	RIVER LEVEL	C.F.S. S-W	C.F.S. M.V.	RIVER LEVEL M.V. <sup>2</sup>
11/13/99	101,000	33.80	39.20	78,600	29.88 <sup>18</sup>
11/15/01	65,100	28.4	N/A	67,400	28.0 <sup>19</sup>
01/08/02	95,600	33.06	38.5	78,700	29.9 <sup>20</sup>
06/29/02	63,900	28.23	35.02	58,100	26.25
10/17/03	94,200	33.04		73,400	29.03
10/21/03	166,000 <sup>21</sup>	42.21	42.02	129,000	36.19
11/19/03	79,323	30.82	37.31	70,129	28.48
11/05/06	63,500	28.25	34.33	52,500	24.84
11/07/06	145,000	39.79	42.21	110,000	33.85
12/04/07	77,900	30.60	37.85	81,000	27.98
11/12/08	66,023	28.69	36.67	77,095	27.49
01/08/09	62,420	28.08	37.87	70,783	28.55
12/13/10	81,251	31.13	39.05	93,084	29.90
01/17/11	74,164	30.12	39.16	92,925	30.83

**As of December 31, 1999, the Skagit River reached flood stage 66 times since January 1, 1900 for an average of once every 1.5 years.**

#### FLOOD EVENTS VS FLOW LEVELS<sup>22</sup>

+10 YEAR FLOOD	CONCRETE	SEDRO WOOLLEY	MT. VERNON
10 year flood	120,000 c.f.s.	137,000	114,000
20 year flood	147,000	165,000	139,000
30 year flood	162,000	187,000	150,000
40 year flood	173,000	196,000	152,000
50 year flood	185,000	205,000	158,000
60 year flood	191,000	213,000	163,000
70 year flood	200,000	221,000	168,000
80 year flood	208,000	227,000	171,000
90 year flood	214,000	234,000	175,000
100 year flood	220,000	236,000	180,000

<sup>18</sup> Info obtained from USGS Internet Web Site

<sup>19</sup> Ibid

<sup>20</sup> Ibid

<sup>21</sup> Sauk River crested 107,000 cfs 18.89, 100 yr flood per USGS 11/10/03 Skagit Flood Control Meeting

<sup>22</sup> All figures obtained from the Corps of Engineers, Seattle District February, 1995.