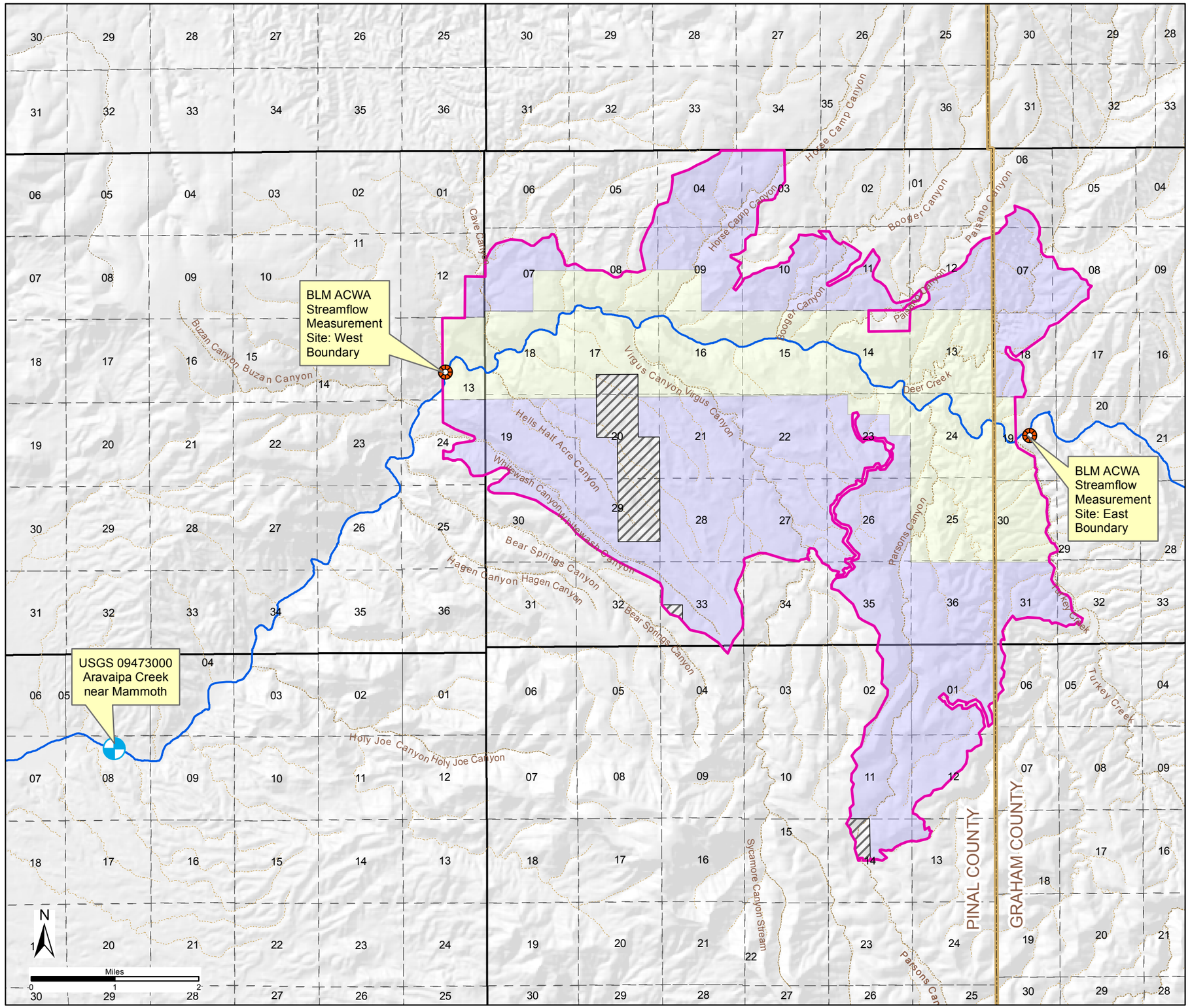
FIGURES



Legend

- Aravaipa Creek
- Tributary Drainages
- ACWA Boundary
- 8/24/1984 Designation
- 11/28/1990 Expansion
- TNC ACWA Inholdings

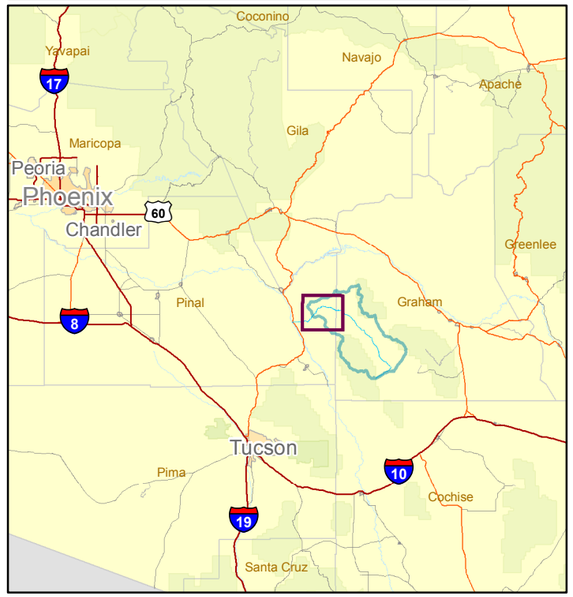
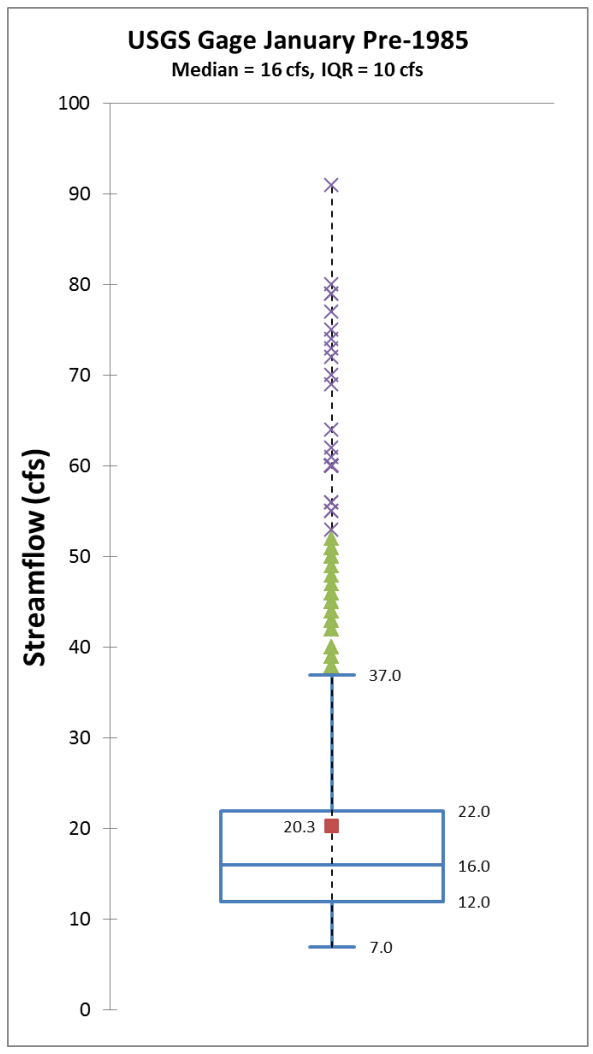


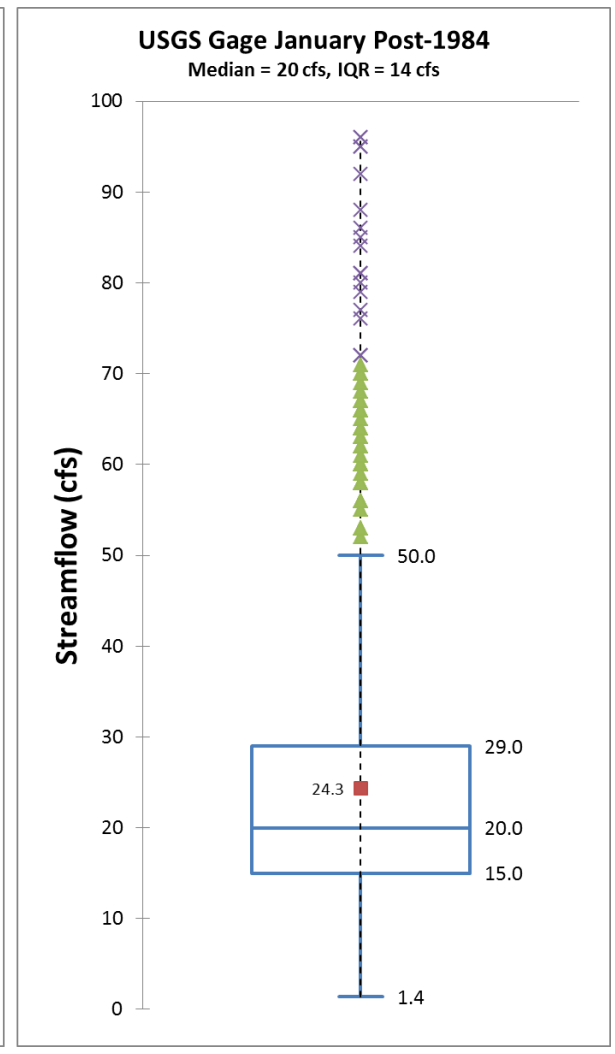
Figure 3-1
ACWA Past and Present Boundaries, Ownership, and Streamflow Measurement Locations

January Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	855	778
Minimum (cfs)	7.0	1.4
25th Percentile (cfs)	12	15
Median (cfs)	16	20
75th Percentile (cfs)	22	29
Maximum (cfs)	91	96
IQR[2] (cfs)	10	14
Median Absolute Deviation (cfs)	4	6
Mean (cfs)	20.33	24.33
Standard Deviation (cfs)	12.83	15.08
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

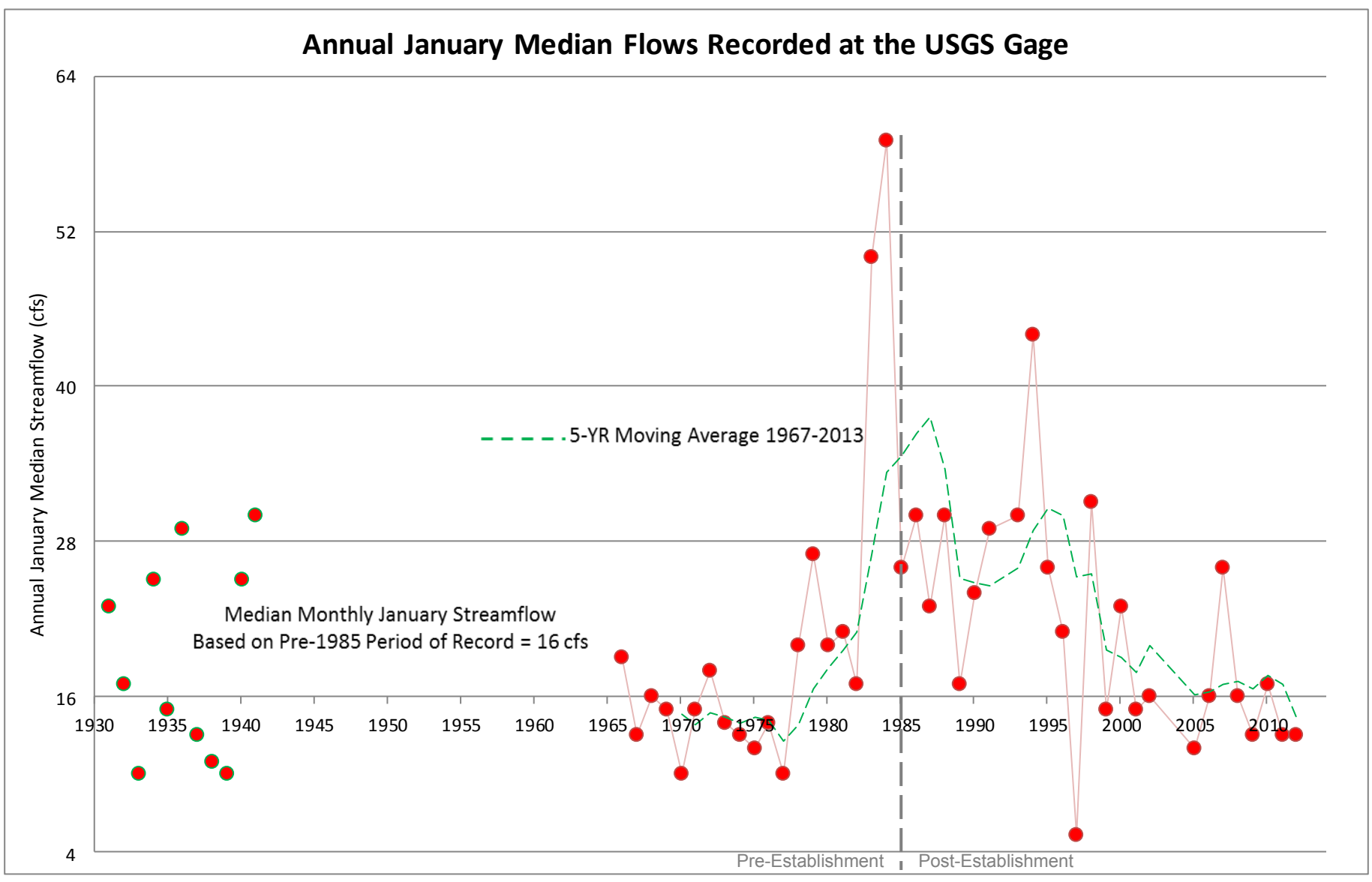


Figure 3-2:

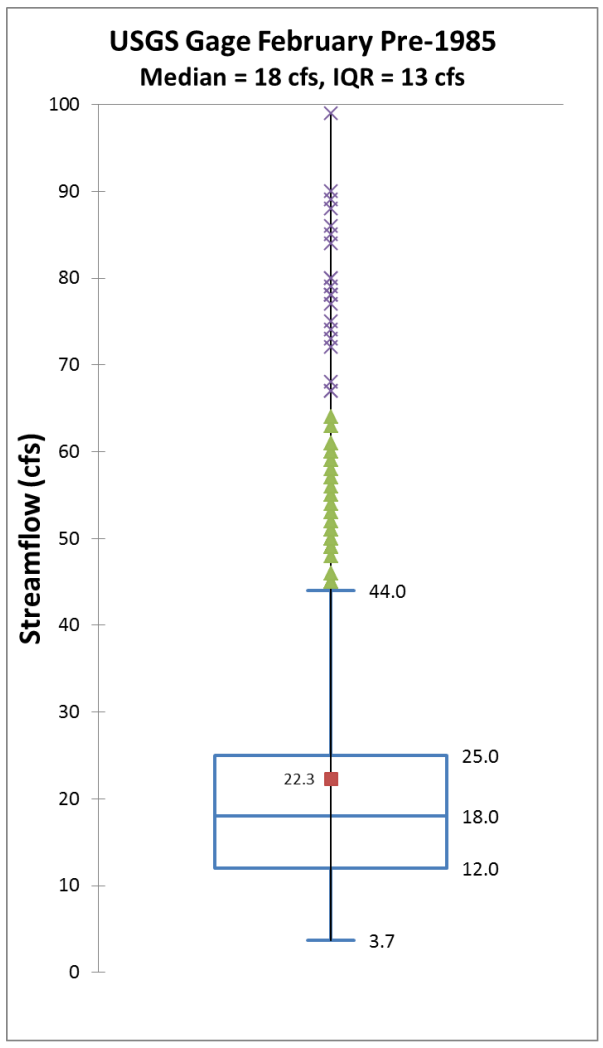
Monthly Streamflow at USGS Gage #09473000: January

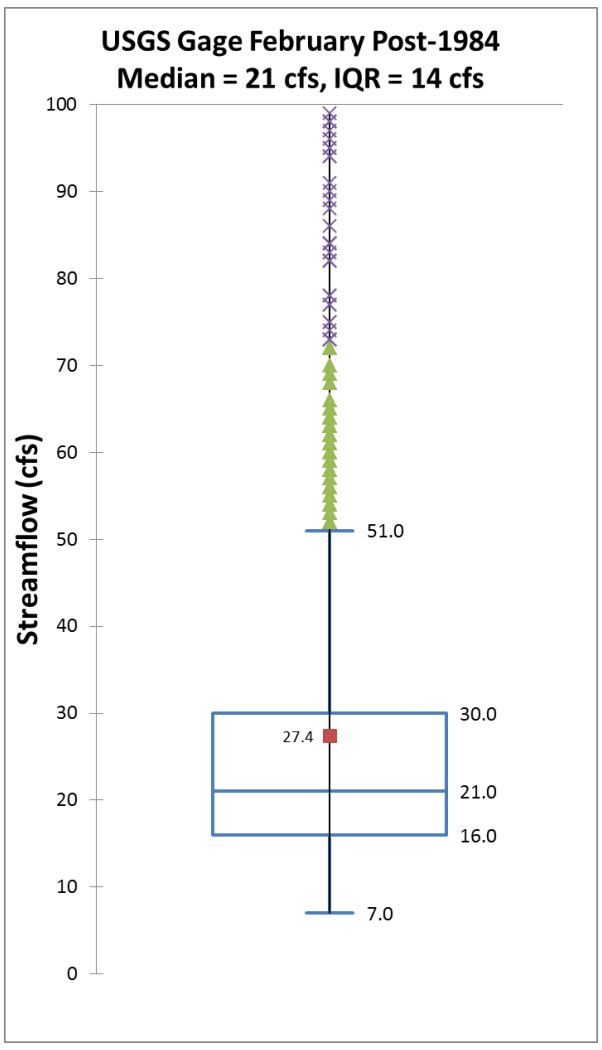
February 2014
ACWA Report

February Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	726	694
Minimum (cfs)	3.7	7.0
25th Percentile (cfs)	12	16
Median (cfs)	18	21
75th Percentile (cfs)	25	30
Maximum (cfs)	99	99
IQR [2] (cfs)	13	14
Median Absolute Deviation (cfs)	6	7
Mean (cfs)	22.33	27.39
Standard Deviation (cfs)	15.43	18.60
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

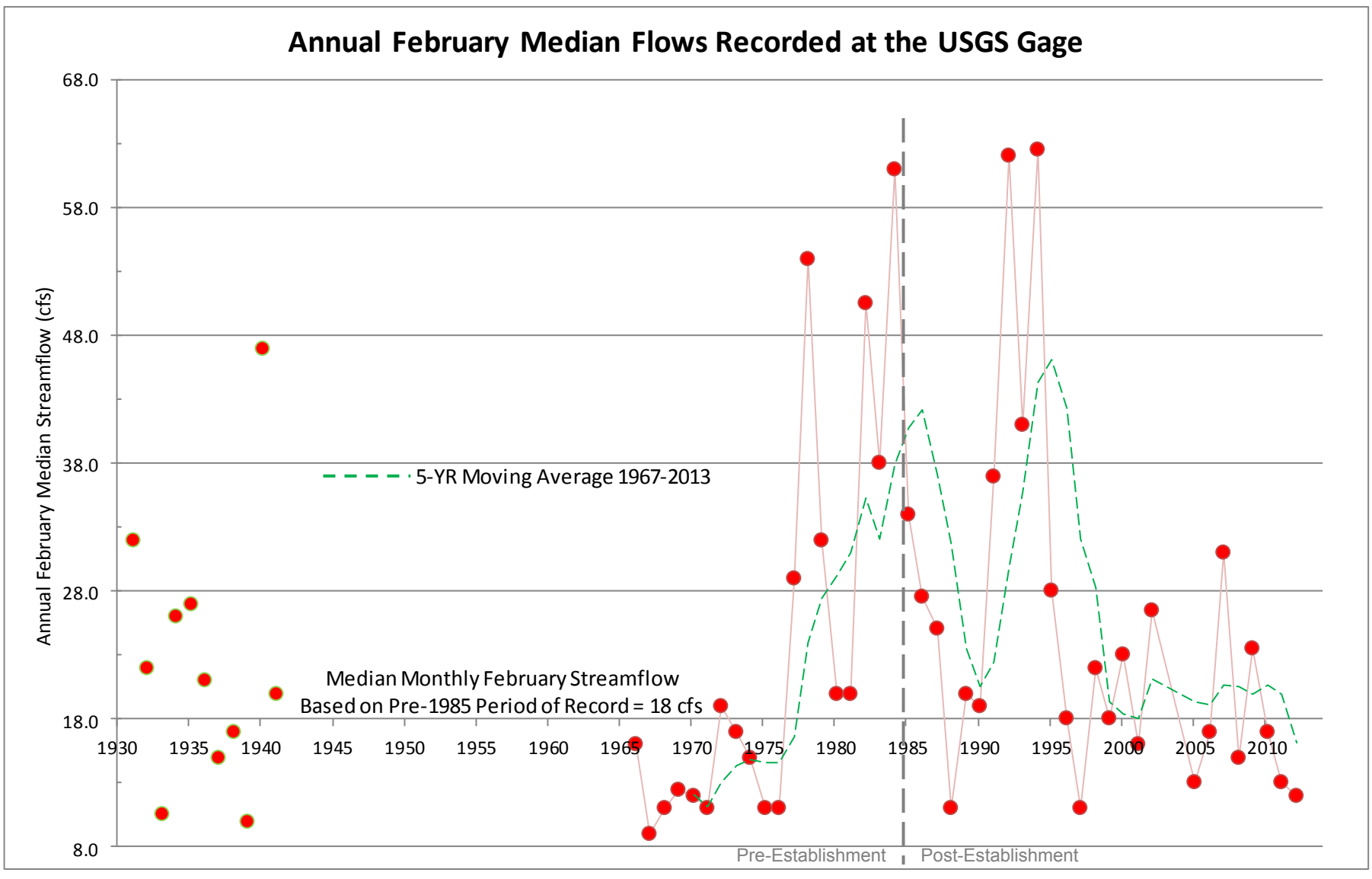


Figure 3-3:

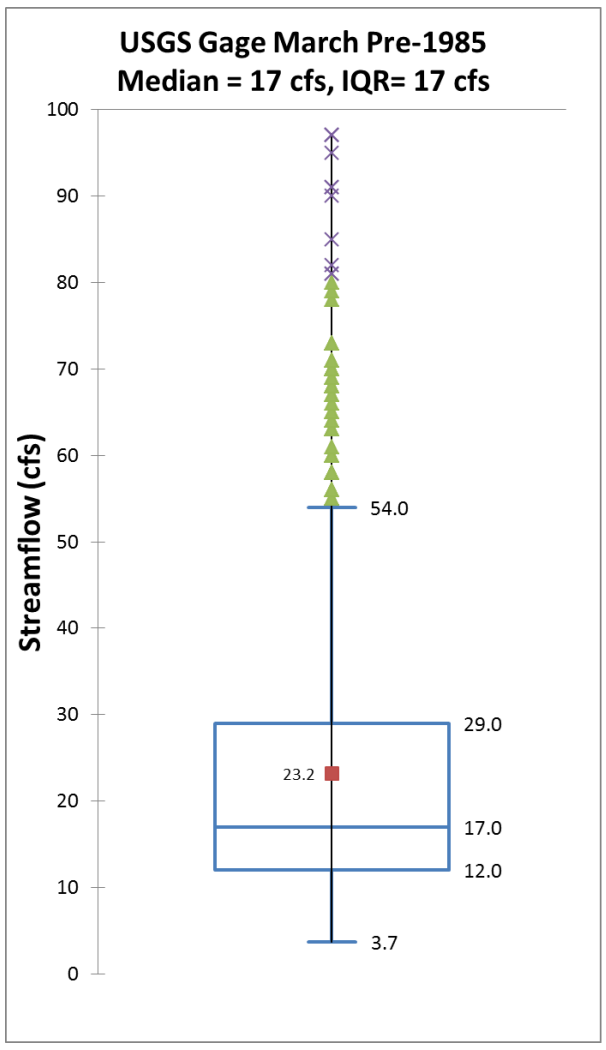
Monthly Streamflow at USGS Gage #09473000: February

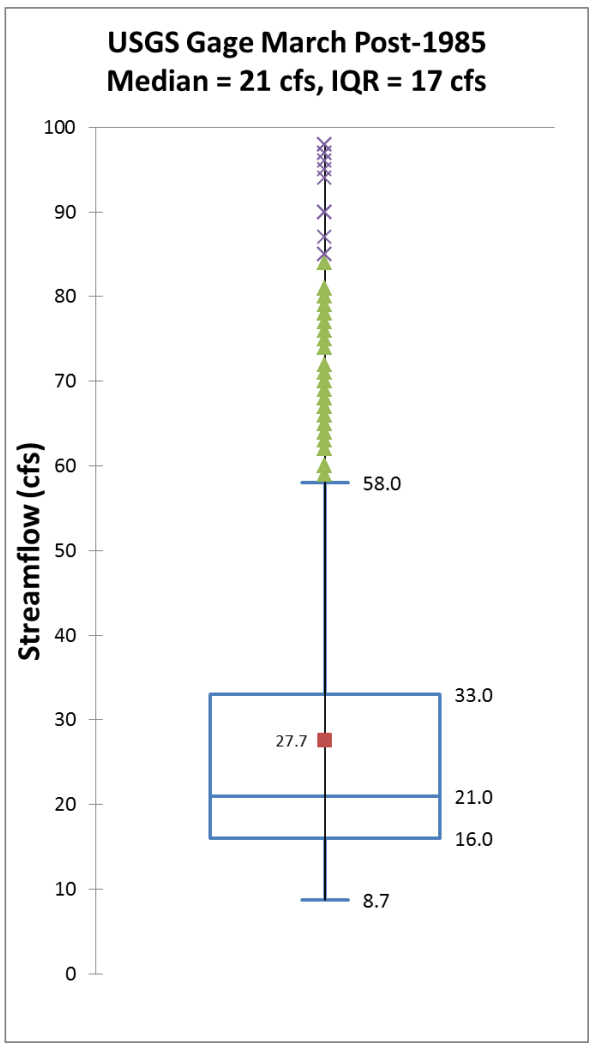
February 2014
ACWA Report

March Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	815	789
Minimum (cfs)	3.7	8.7
25th Percentile (cfs)	12	16
Median (cfs)	17	21
75th Percentile (cfs)	29	33
Maximum (cfs)	97	98
IQR [2] (cfs)	17	17
Median Absolute Deviation (cfs)	6	7
Mean (cfs)	23.22	27.66
Standard Deviation (cfs)	16.82	18.46
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967 -1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

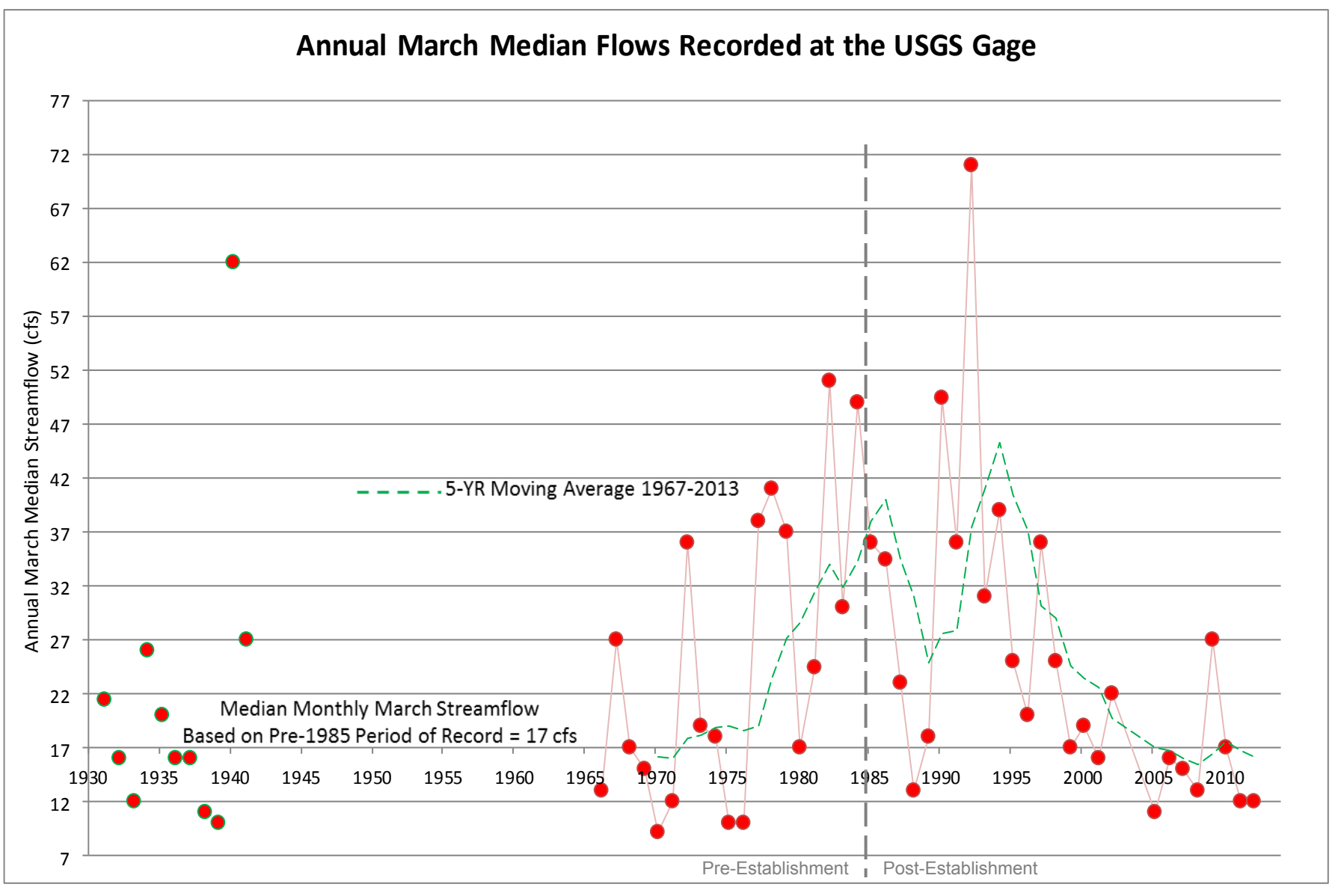


Figure 3-4:

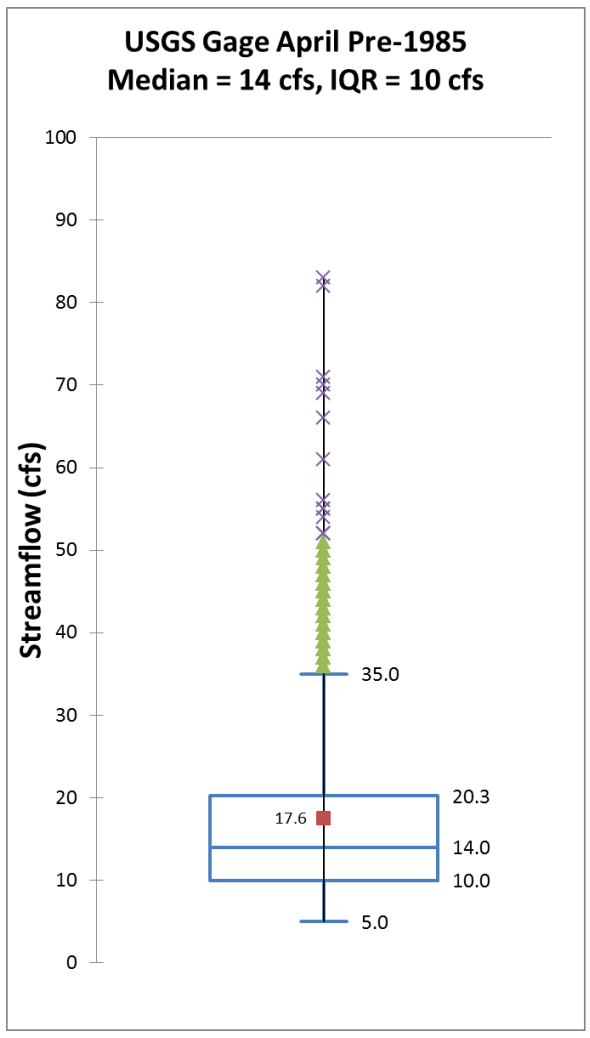
Monthly Streamflow at USGS Gage #09473000: March

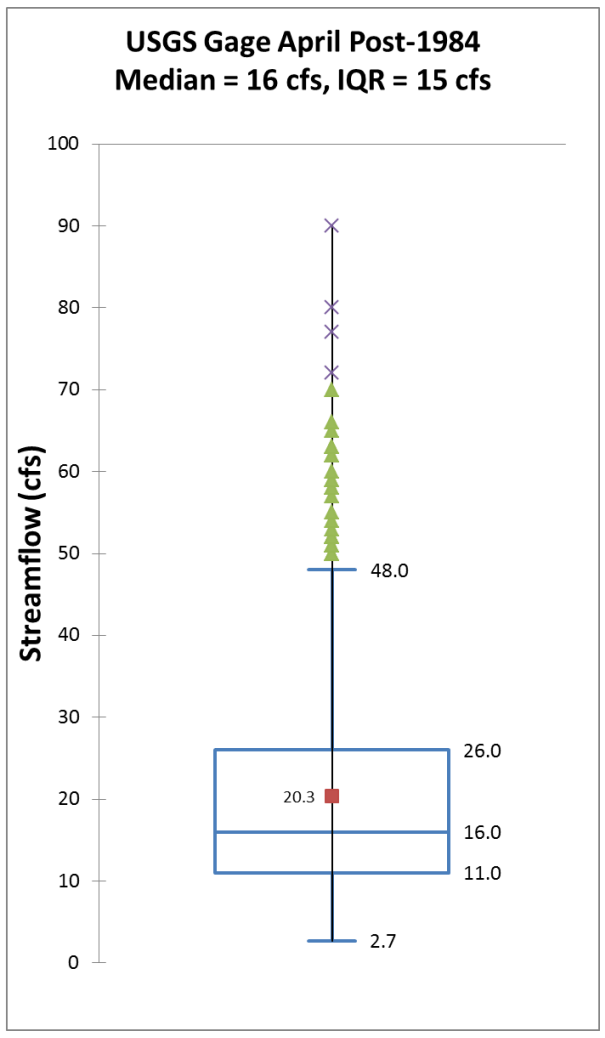
February 2014
ACWA Report

April Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	868	804
Minimum (cfs)	5.0	2.7
25th Percentile (cfs)	10	11
Median (cfs)	14	16
75th Percentile (cfs)	20.3	26
Maximum (cfs)	83	90
IQR [2] (cfs)	10	15
Median Absolute Deviation (cfs)	5	6.6
Mean (cfs)	17.56	20.33
Standard Deviation (cfs)	11.44	12.66
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

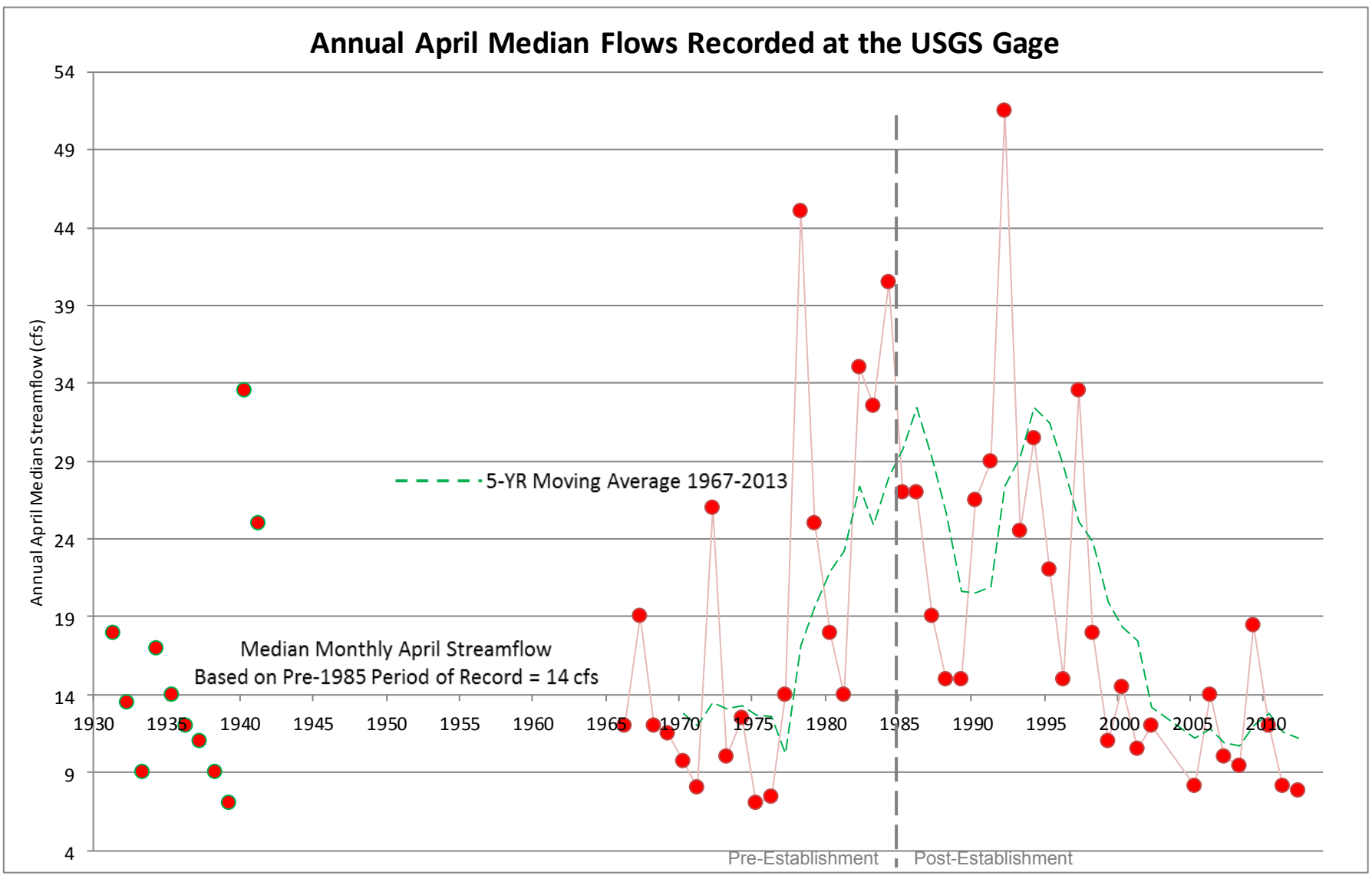


Figure 3-5:

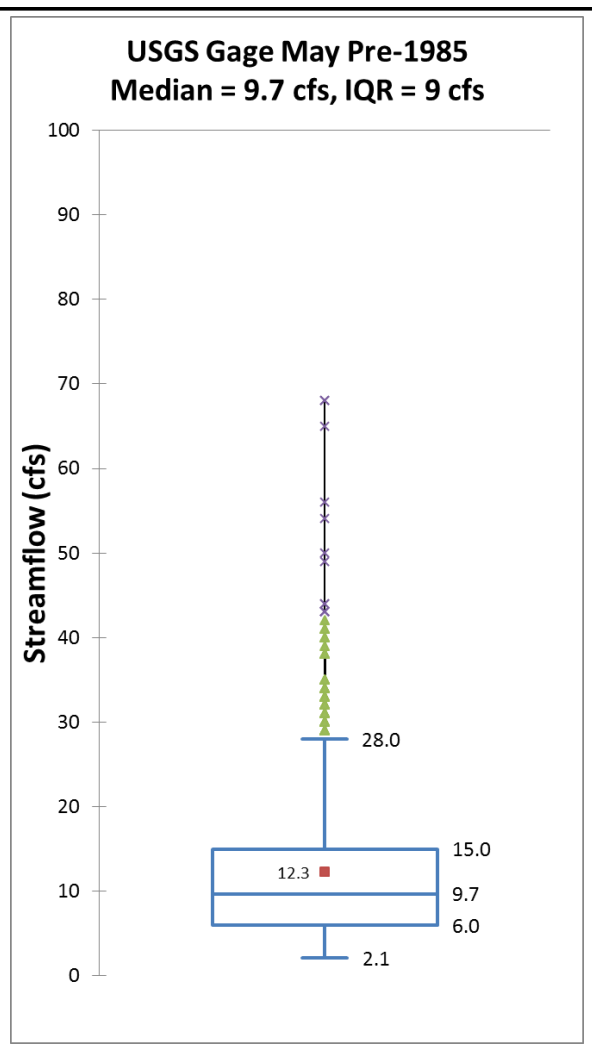
Monthly Streamflow at USGS Gage #09473000: April

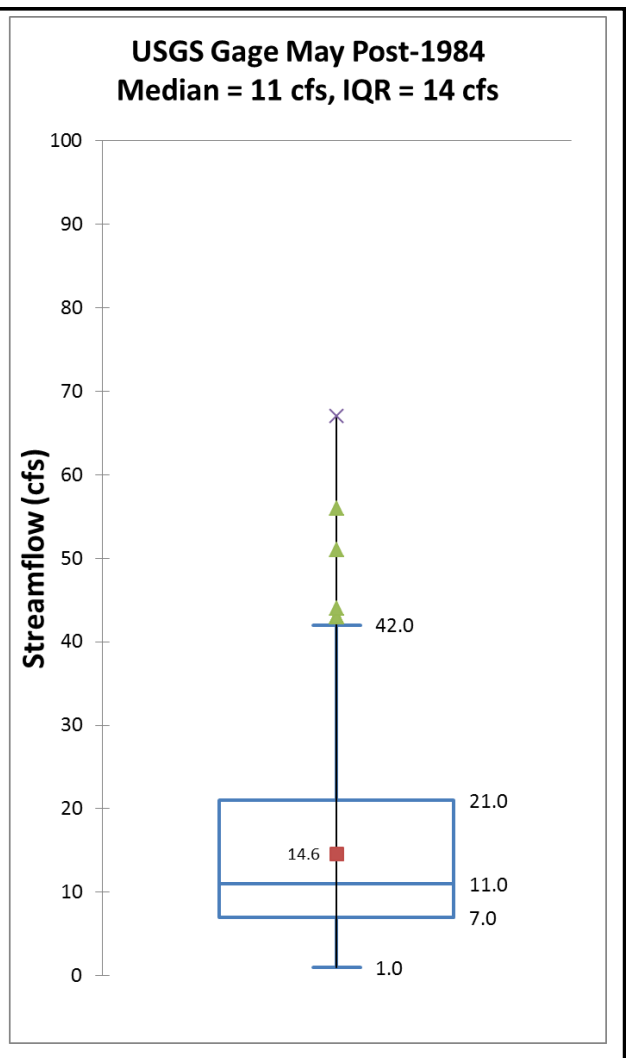
February 2014
ACWA Report

May Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	936	837
Minimum (cfs)	2.1	1.0
25th Percentile (cfs)	6	7
Median (cfs)	9.7	11
75th Percentile (cfs)	15	21
Maximum (cfs)	68	67
IQR [2] (cfs)	9	14
Median Absolute Deviation (cfs)	4.3	5.1
Mean (cfs)	12.26	14.61
Standard Deviation (cfs)	8.97	10.37
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

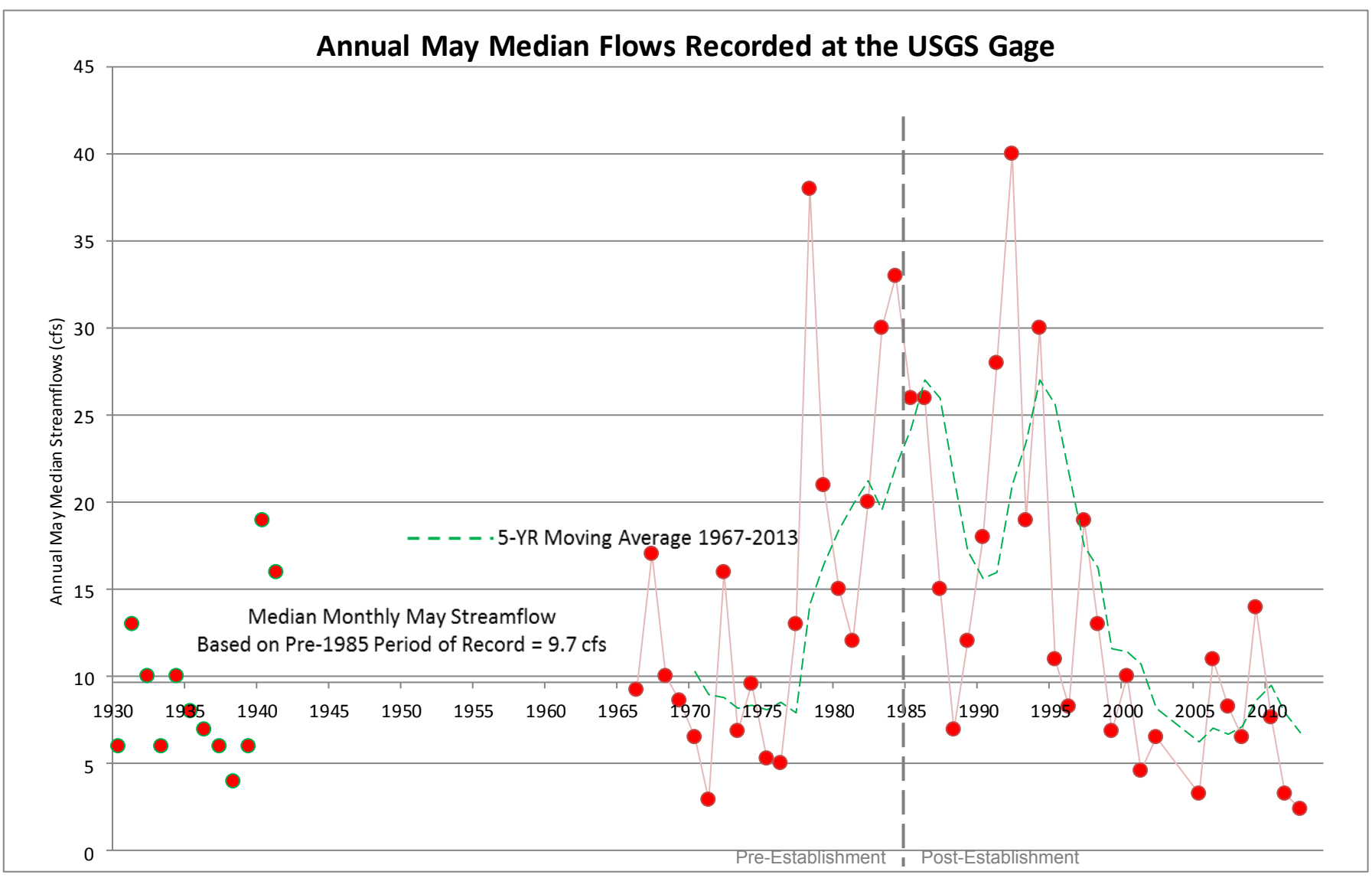


Figure 3-6:

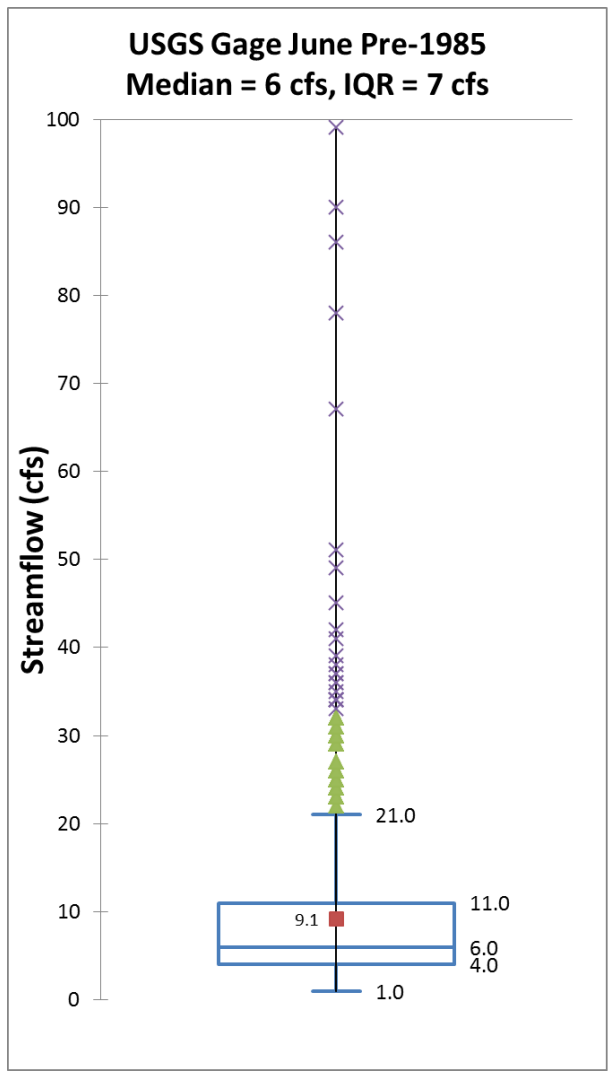
Monthly Streamflow at USGS Gage #09473000: May

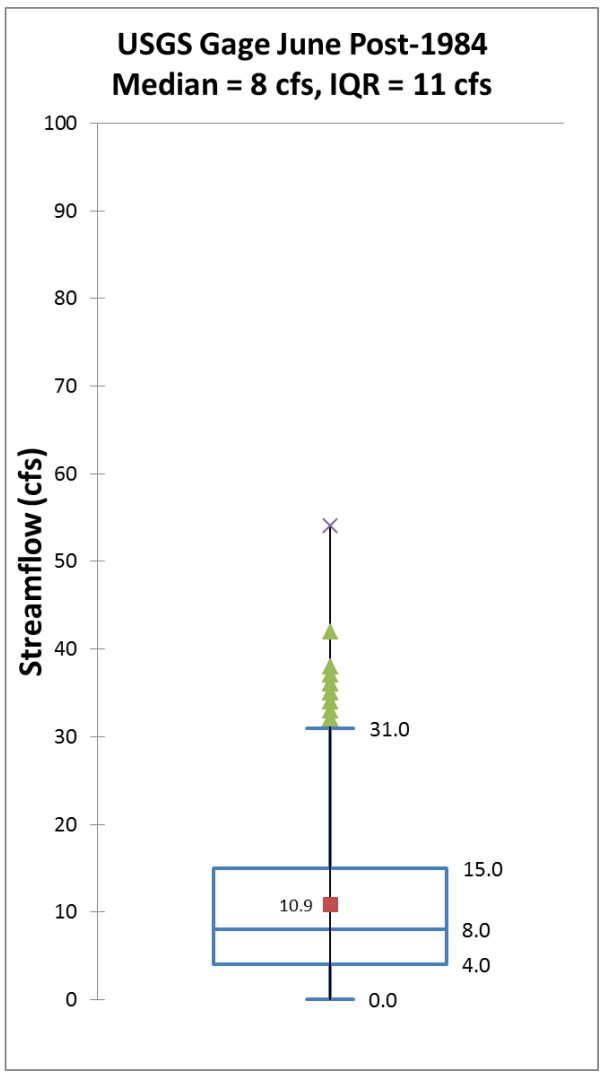
February 2014
ACWA Report

June Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	925	810
Minimum (cfs)	1.0	0.0
25th Percentile (cfs)	4	4
Median (cfs)	6	8
75th Percentile (cfs)	11	15
Maximum (cfs)	99	54
IQR [2] (cfs)	7	11
Median Absolute Deviation (cfs)	2.8	5
Mean (cfs)	9.12	10.88
Standard Deviation (cfs)	9.34	9.20
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

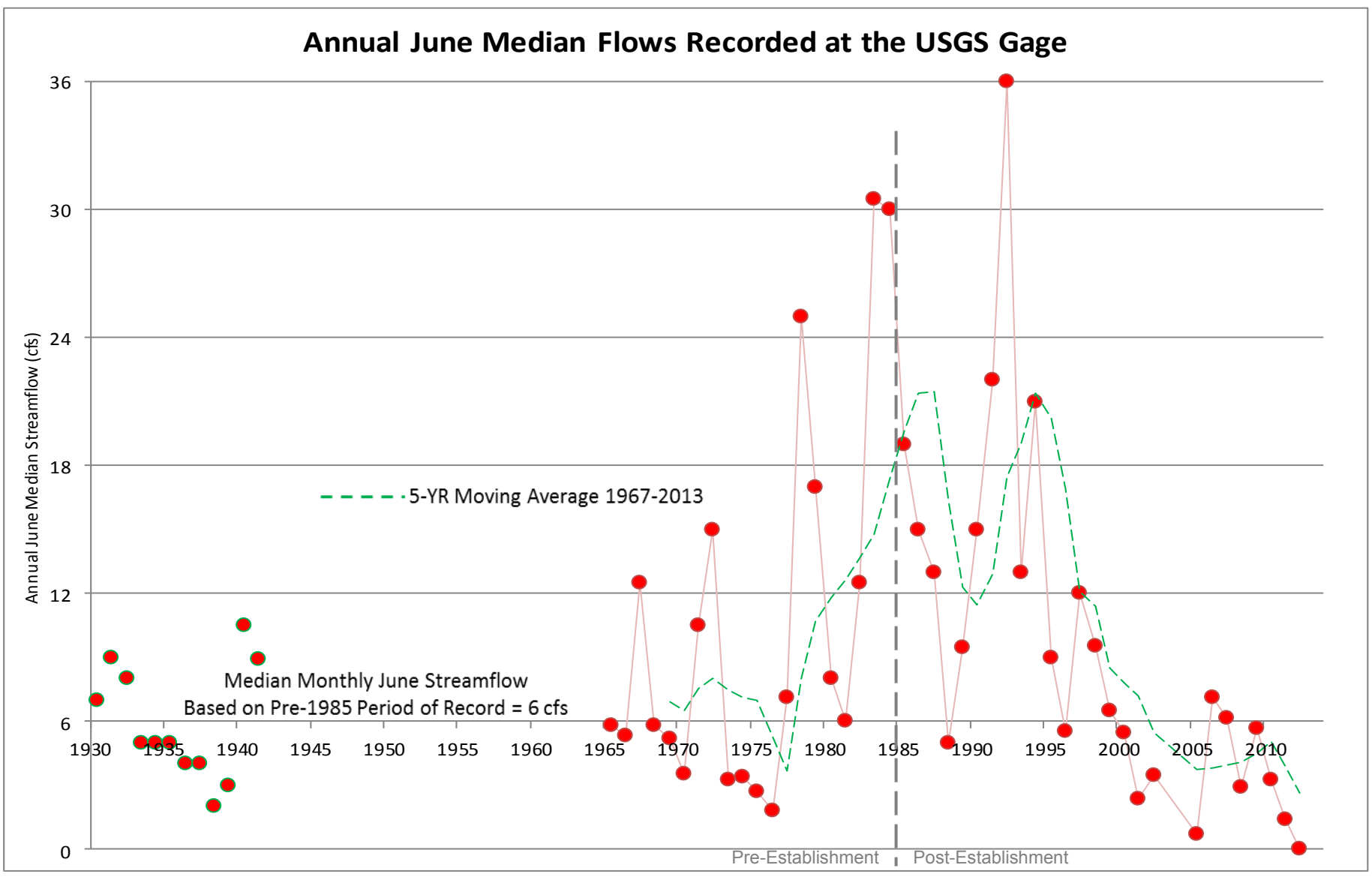


Figure 3-7:

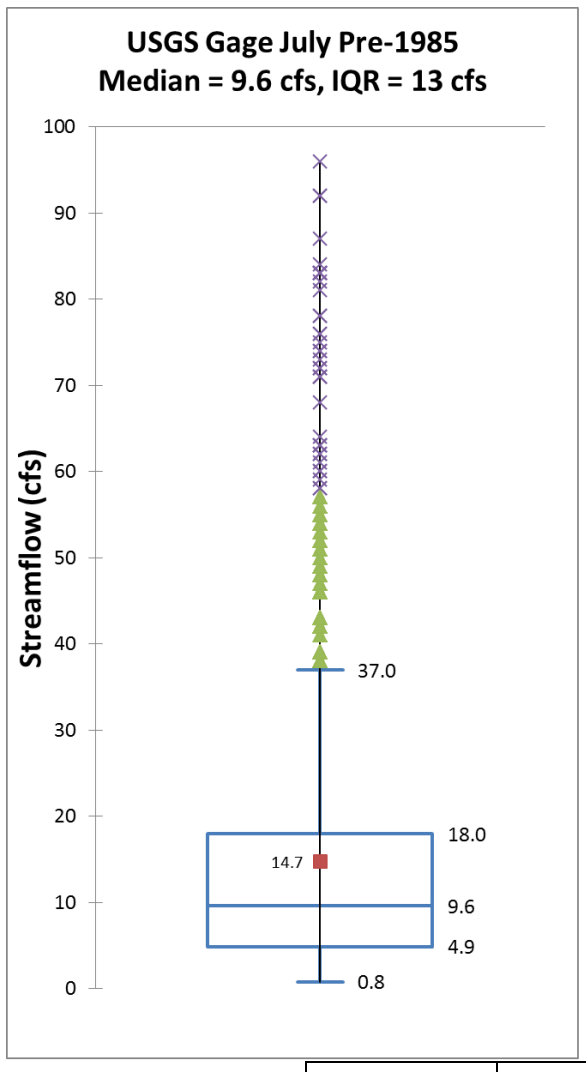
Monthly Streamflow at USGS Gage #09473000: June

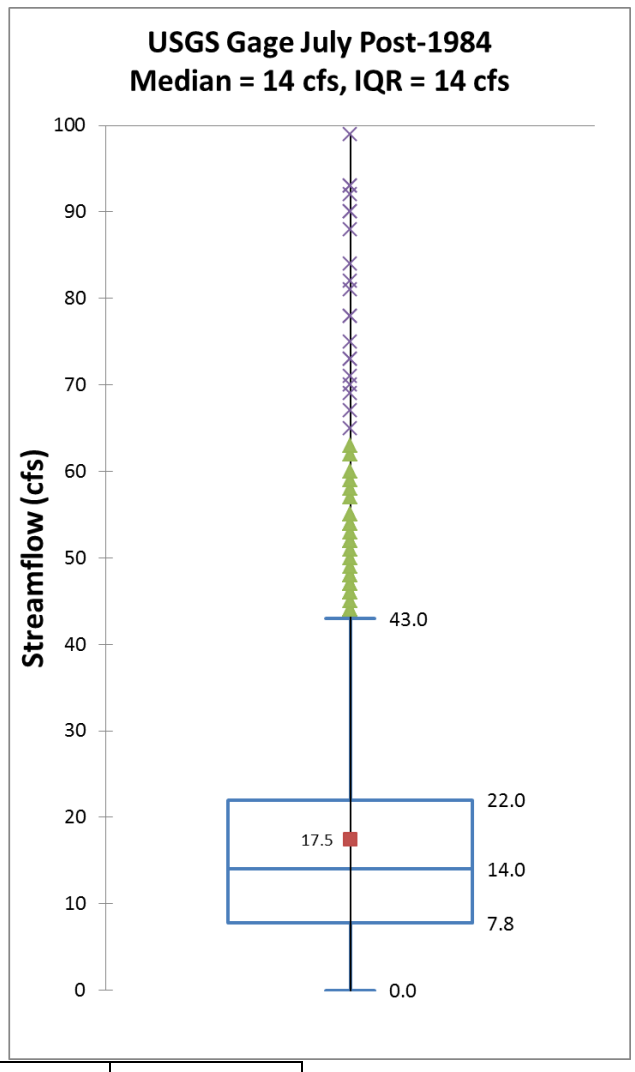
February 2014
ACWA Report

July Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	924	810
Minimum (cfs)	0.8	0.0
25th Percentile (cfs)	4.9	7.8
Median (cfs)	9.6	14
75th Percentile (cfs)	18	22
Maximum (cfs)	96	99
IQR [2] (cfs)	13	14
Median Absolute Deviation (cfs)	5.6	7
Mean (cfs)	14.72	17.45
Standard Deviation (cfs)	16.19	15.17
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

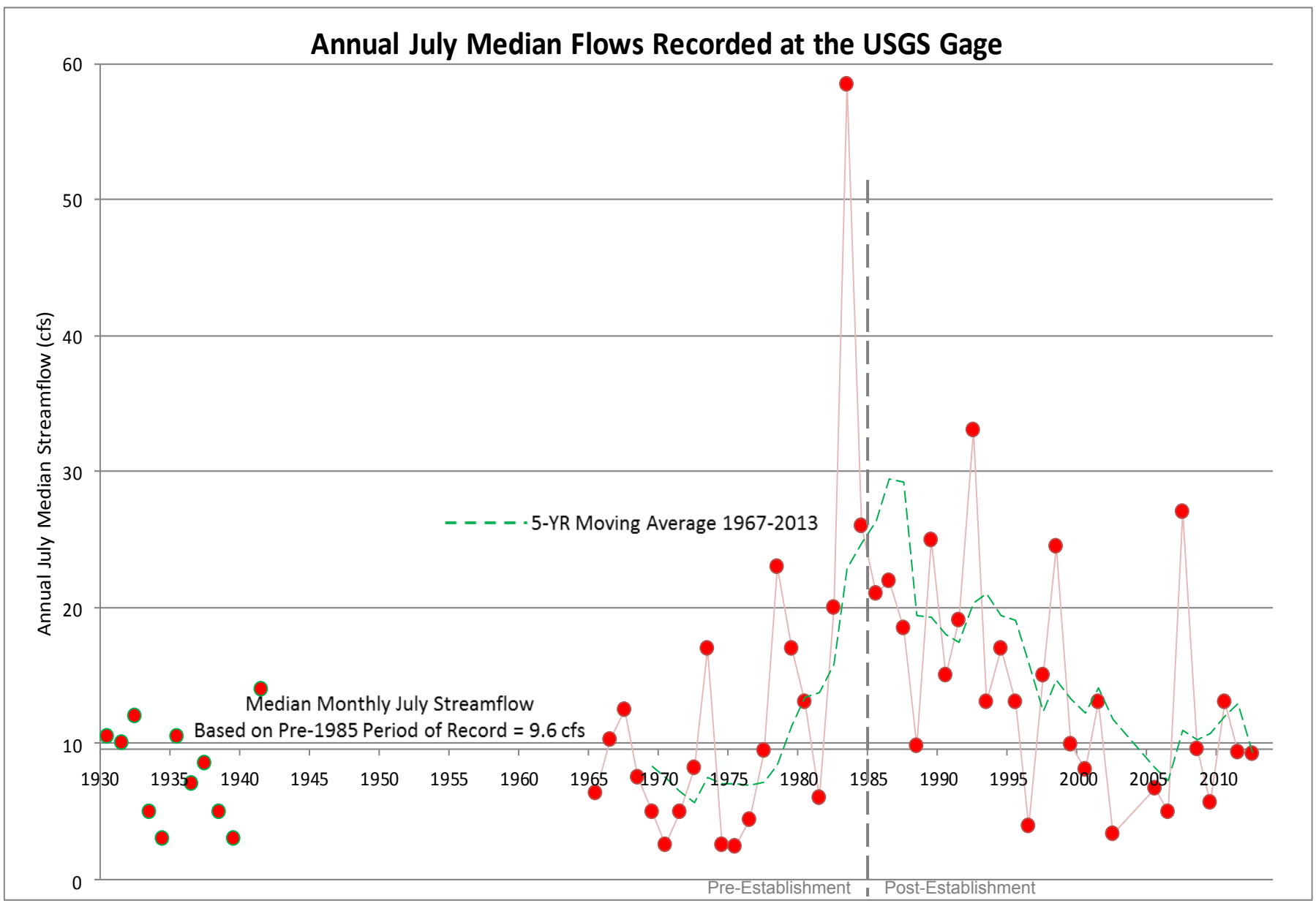


Figure 3-8:

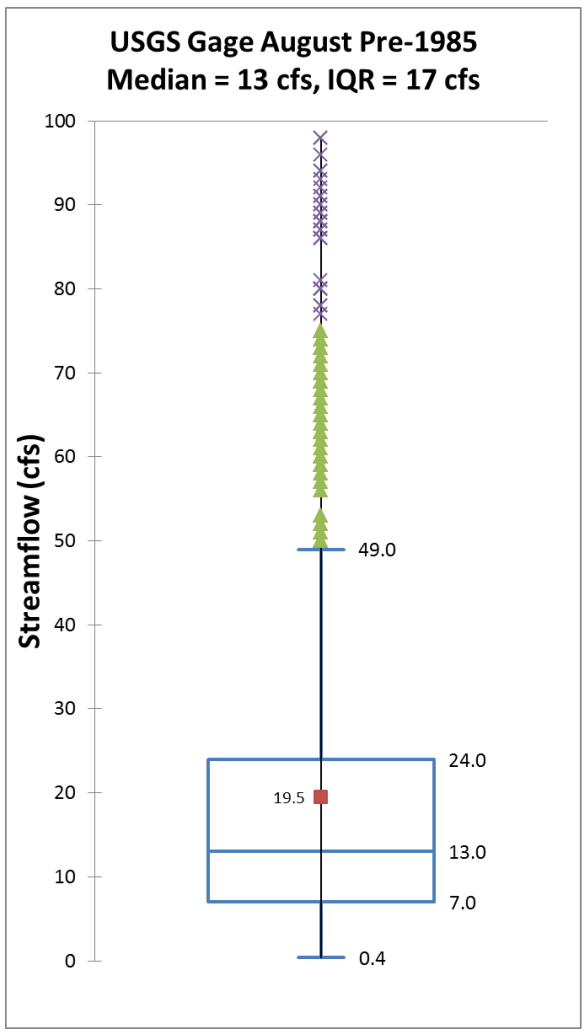
Monthly Streamflow at USGS Gage #09473000: July

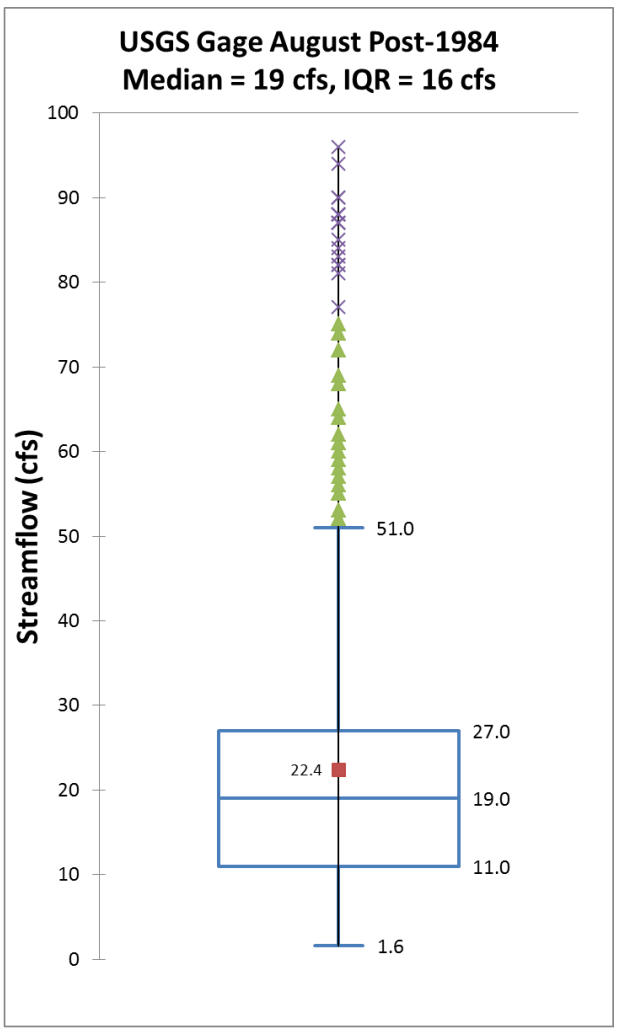
February 2014
ACWA Report

August Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	834	809
Minimum (cfs)	0.4	1.6
25th Percentile (cfs)	7	11
Median (cfs)	13	19
75th Percentile (cfs)	24	27
Maximum (cfs)	98	96
IQR [2] (cfs)	17	16
Median Absolute Deviation (cfs)	7	8
Mean (cfs)	19.52	22.41
Standard Deviation (cfs)	19.66	16.37
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

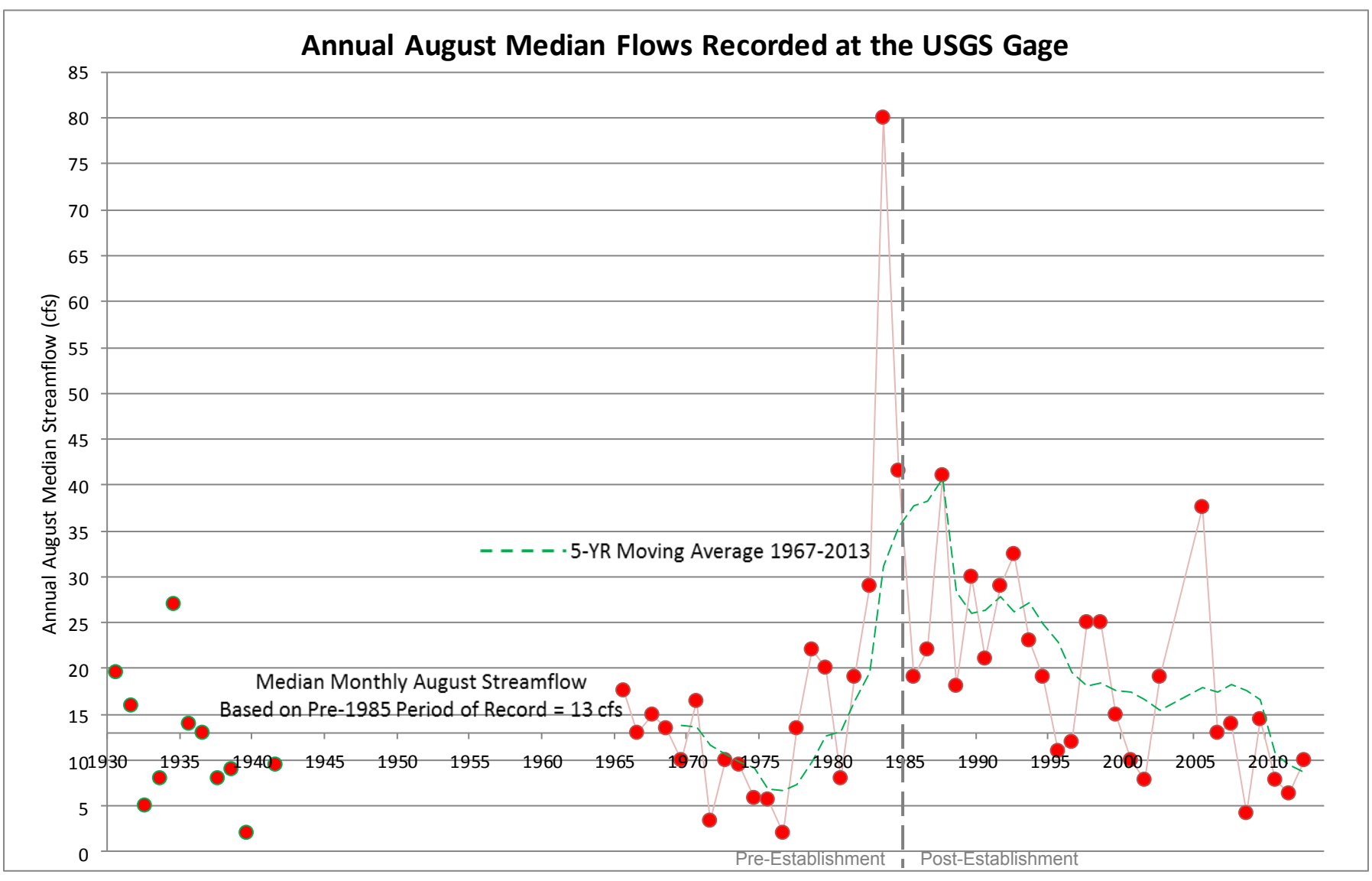


Figure 3-9:

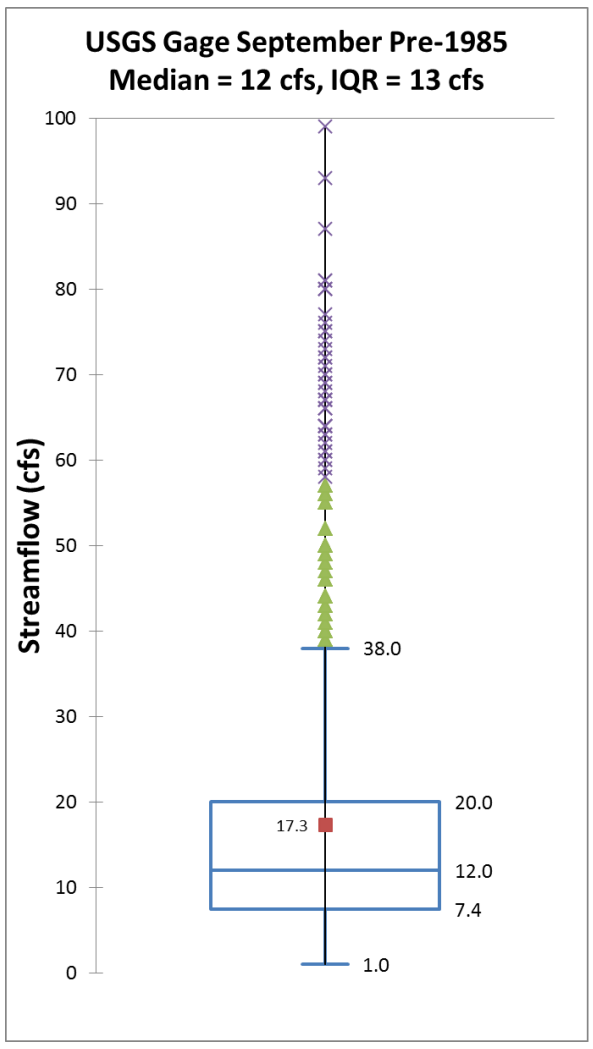
Monthly Streamflow at USGS Gage #09473000: August

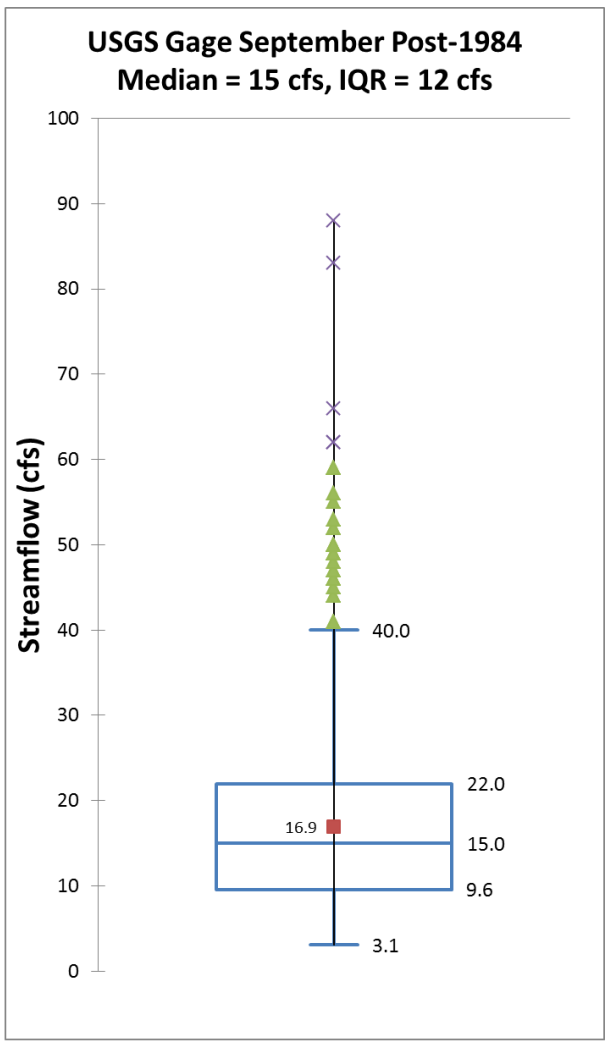
February 2014
ACWA Report

September Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	858	801
Minimum (cfs)	1.0	3.1
25th Percentile (cfs)	7.4	10
Median (cfs)	12	15
75th Percentile (cfs)	20	22
Maximum (cfs)	99	88
IQR [2] (cfs)	13	12
Median Absolute Deviation (cfs)	6	6
Mean (cfs)	17.28	16.93
Standard Deviation (cfs)	16.25	10.26
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

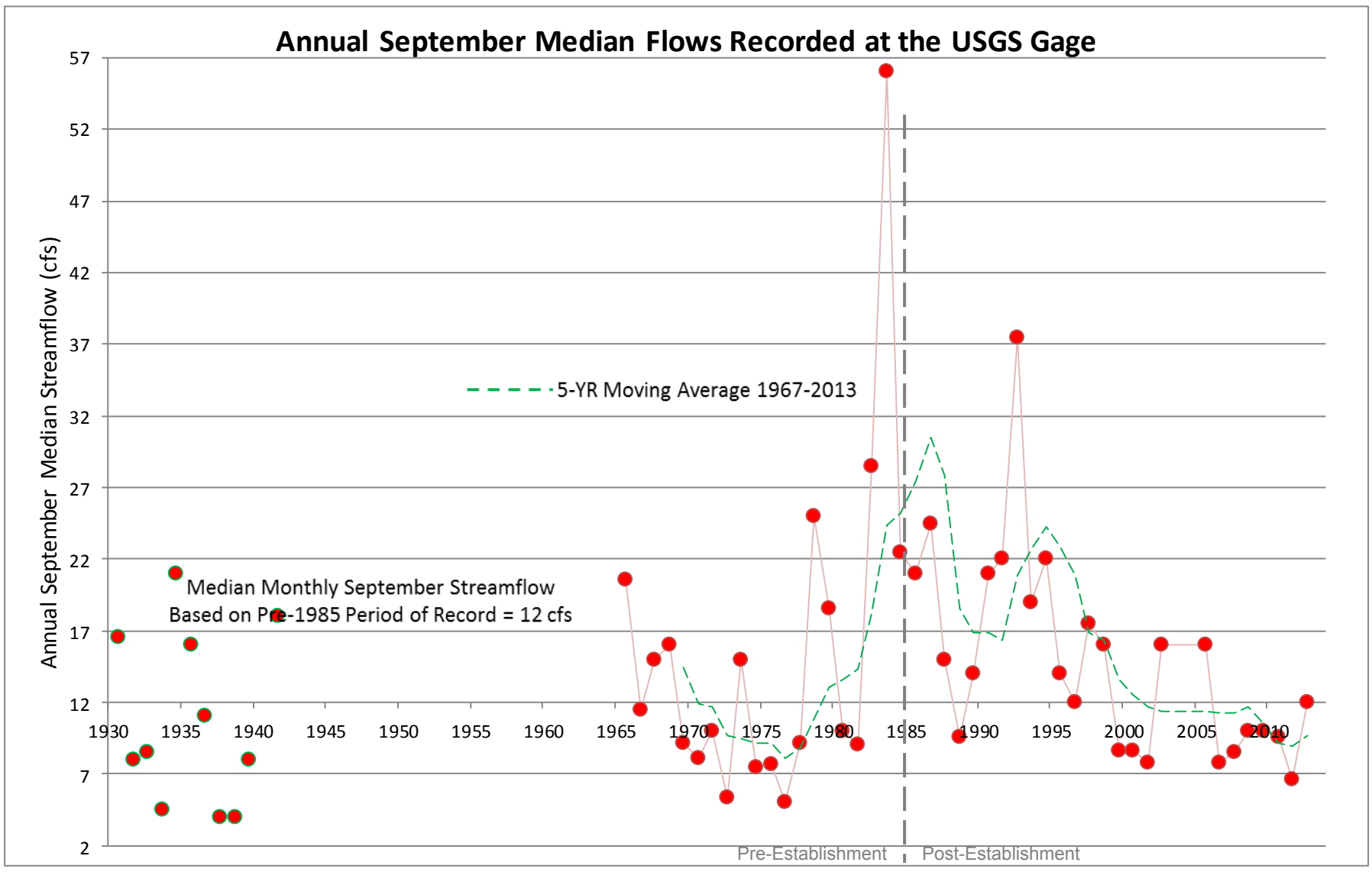


Figure 3-10:

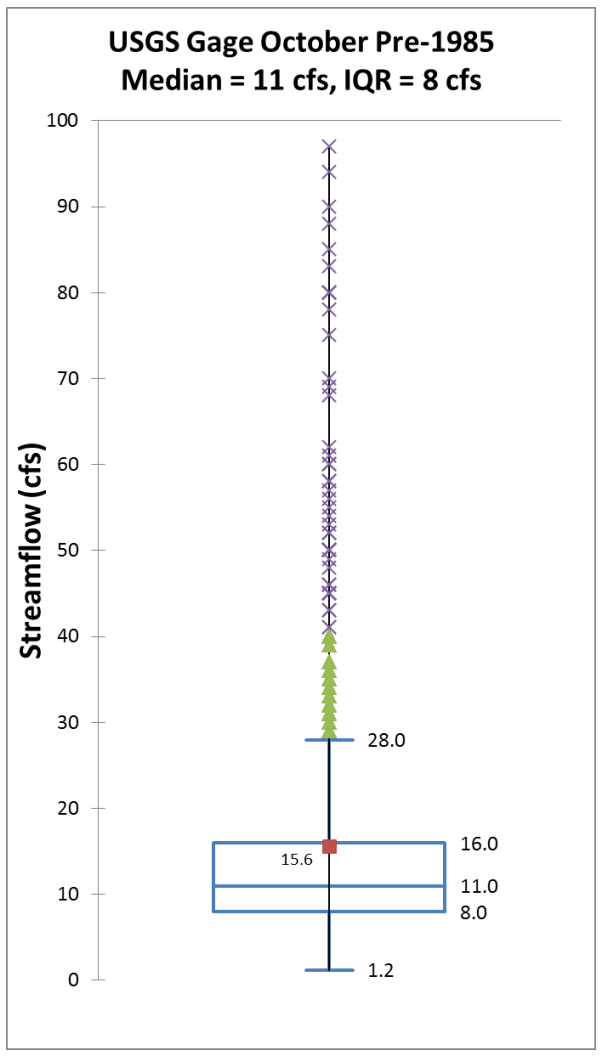
Monthly Streamflow at USGS Gage #09473000: September

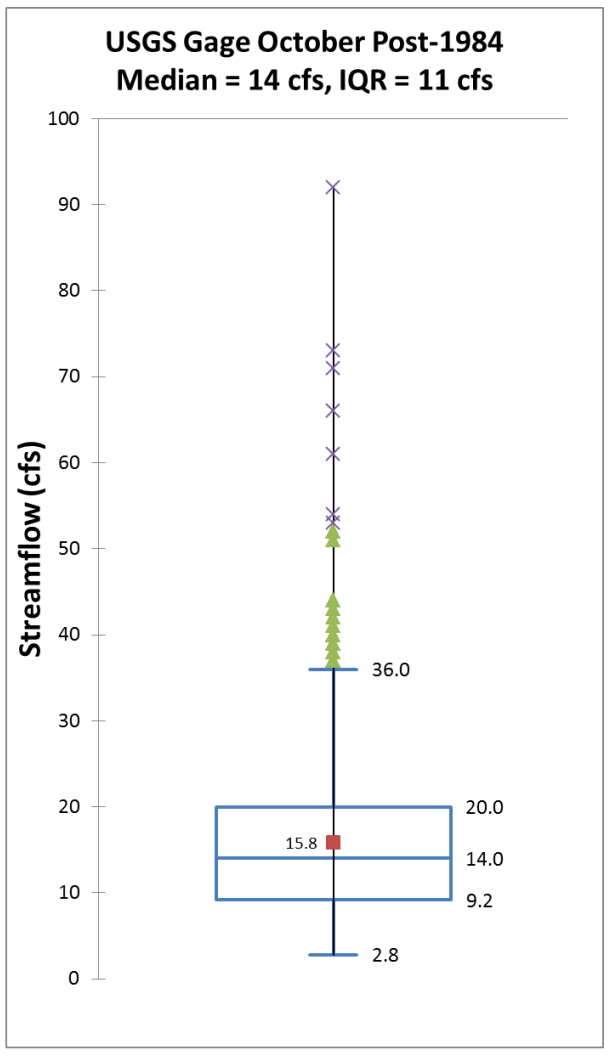
February 2014
ACWA Report

October Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	934	800
Minimum (cfs)	1.2	2.8
25th Percentile (cfs)	8	9.2
Median (cfs)	11	14
75th Percentile (cfs)	16	20
Maximum (cfs)	97	92
IQR [2] (cfs)	8	11
Median Absolute Deviation (cfs)	3.5	5
Mean (cfs)	15.6	15.8
Standard Deviation (cfs)	13.92	9.38
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

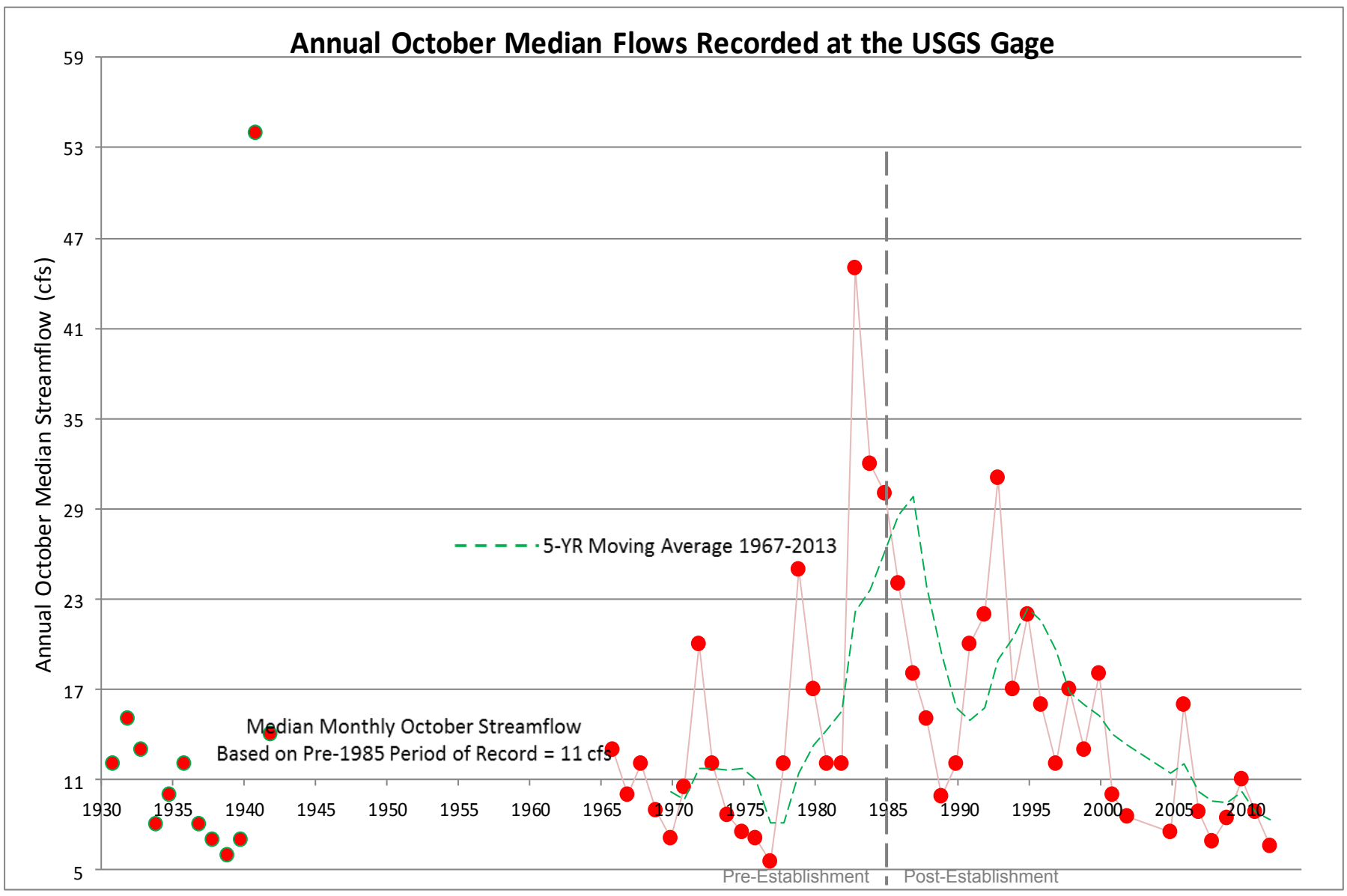


Figure 3-11:

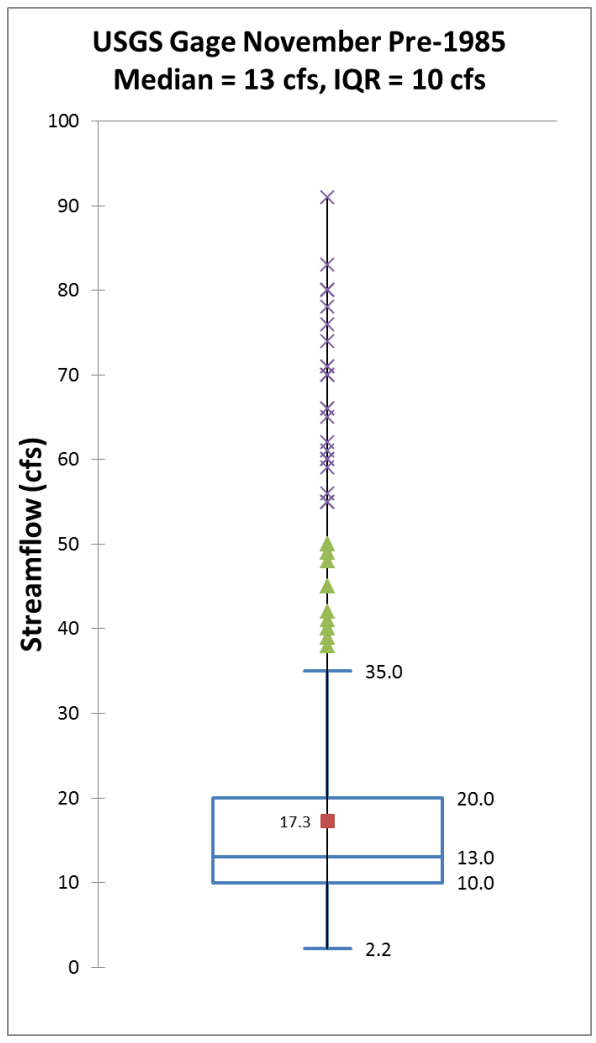
Monthly Streamflow at USGS Gage #09473000: October

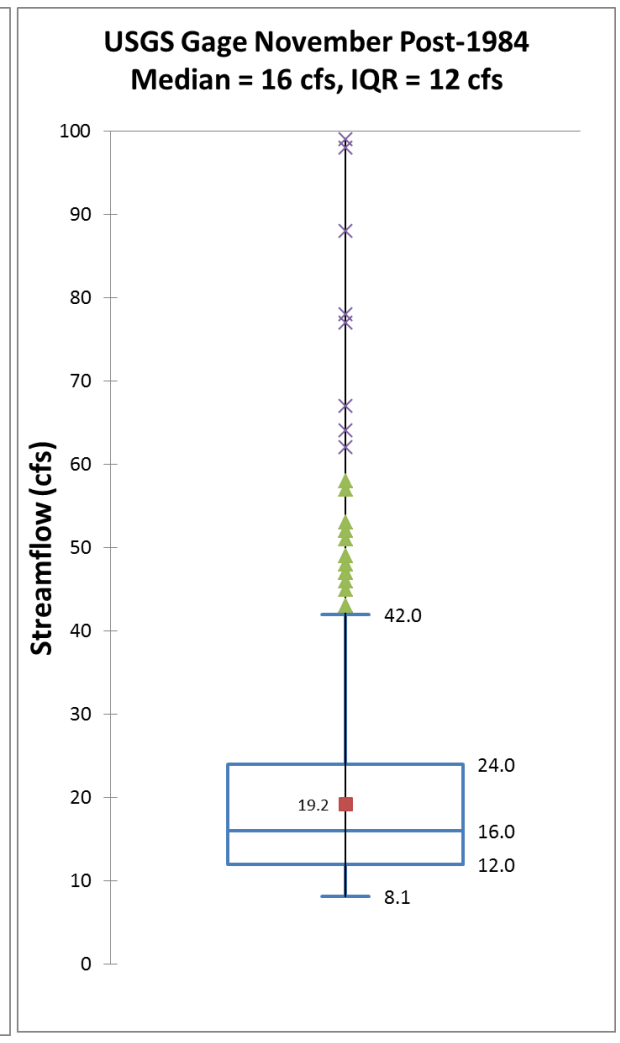
February 2014
ACWA Report

November Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	912	774
Minimum (cfs)	2.2	8.1
25th Percentile (cfs)	10	12
Median (cfs)	13	16
75th Percentile (cfs)	20	24
Maximum (cfs)	91	99
IQR [2] (cfs)	10	12
Median Absolute Deviation (cfs)	3.6	5
Mean (cfs)	17.25	19.22
Standard Deviation (cfs)	12	10.69
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

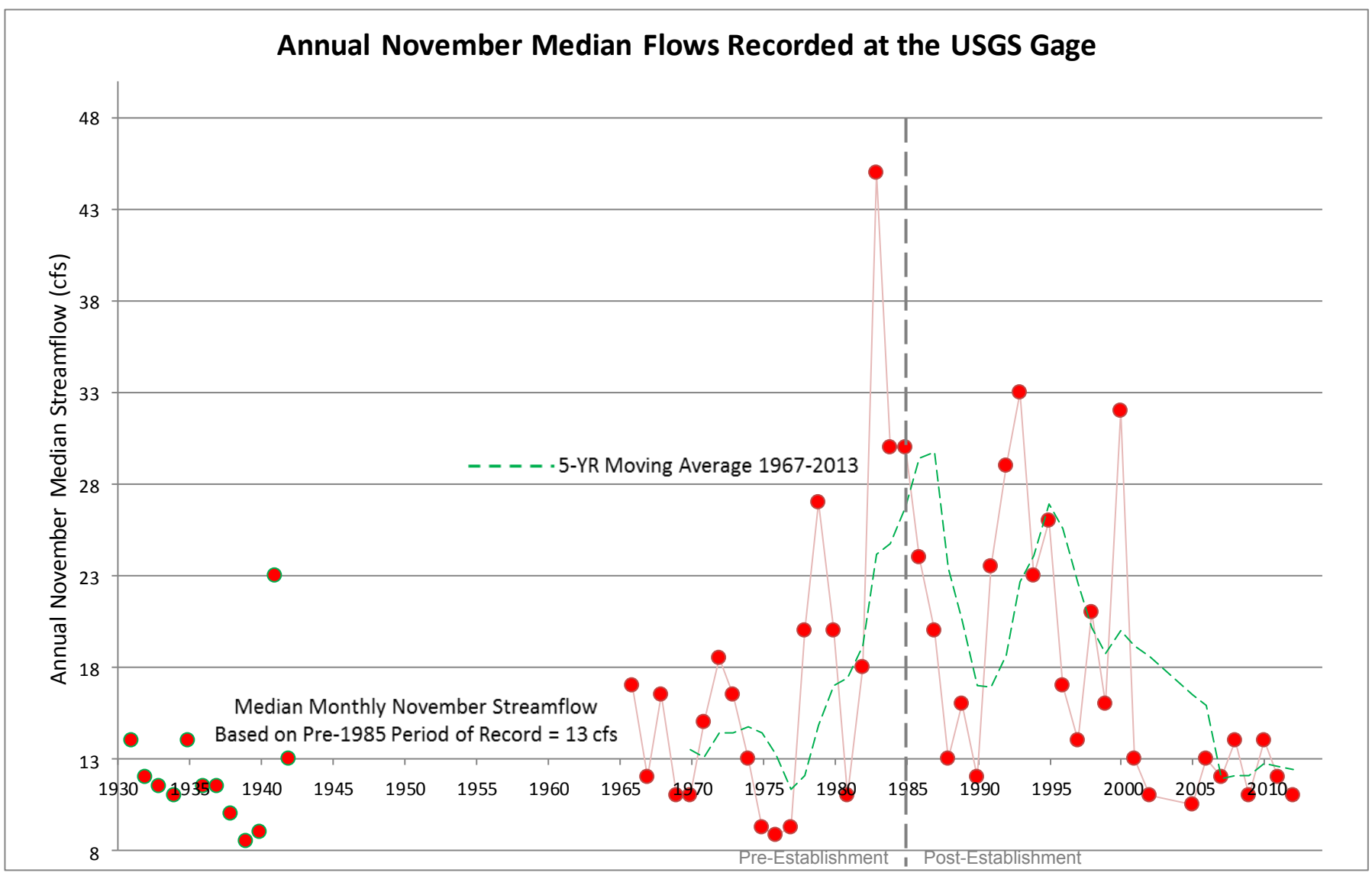


Figure 3-12:

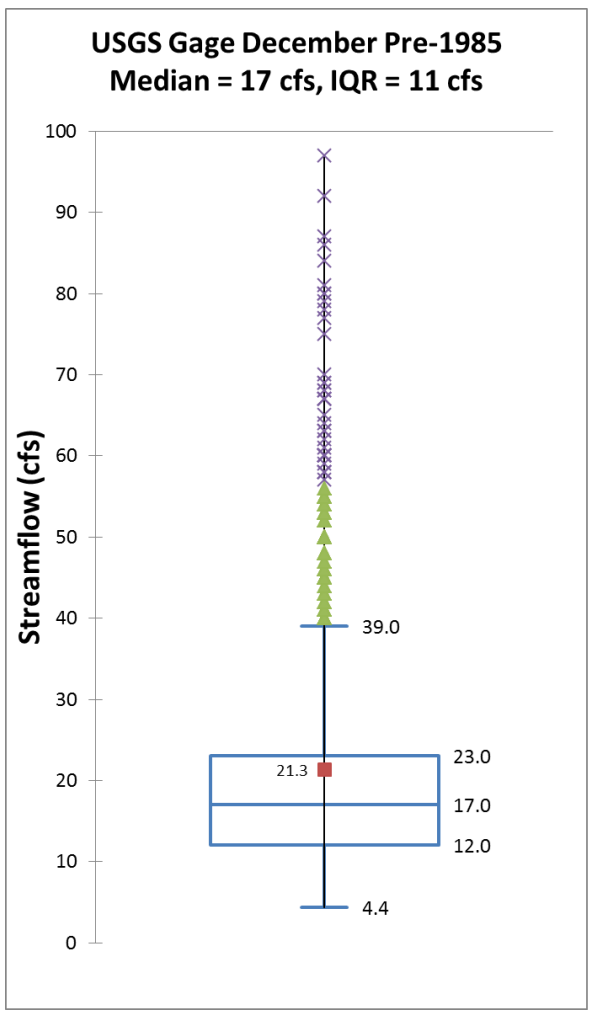
Monthly Streamflow at USGS Gage #09473000: November

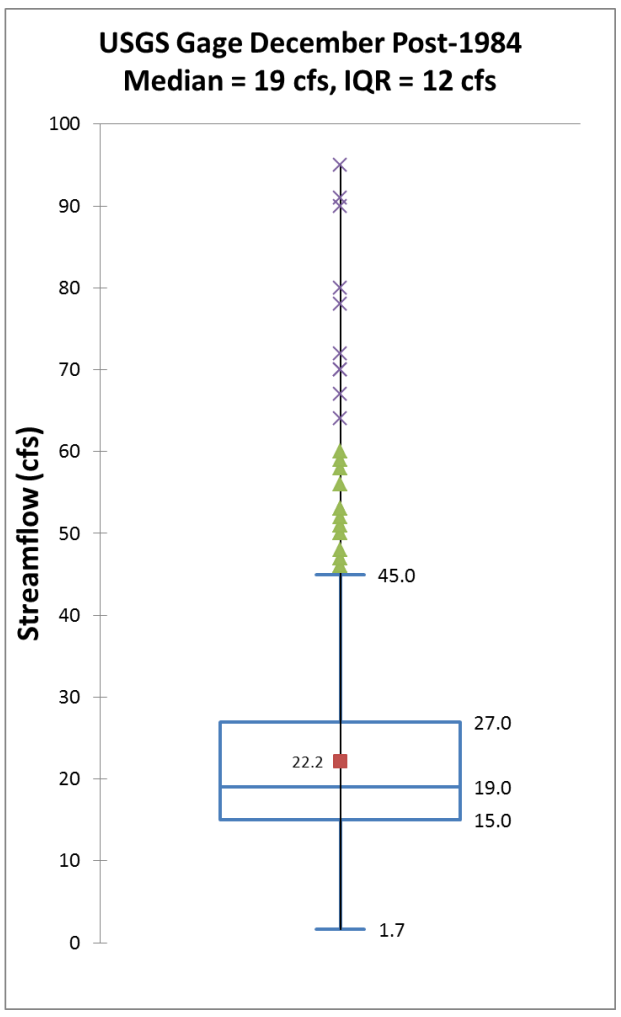
February 2014
ACWA Report

December Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements less than 100 cfs)	920	787
Minimum (cfs)	4.4	1.7
25th Percentile (cfs)	12	15
Median (cfs)	17	19
75th Percentile (cfs)	23	27
Maximum (cfs)	97	95
IQR [2] (cfs)	11	12
Median Absolute Deviation (cfs)	5	5
Mean (cfs)	21.32	22.17
Standard Deviation (cfs)	14.44	11.39
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





■	▲	×
Mean	Range 1.5-3*IQR	Range >3*IQR

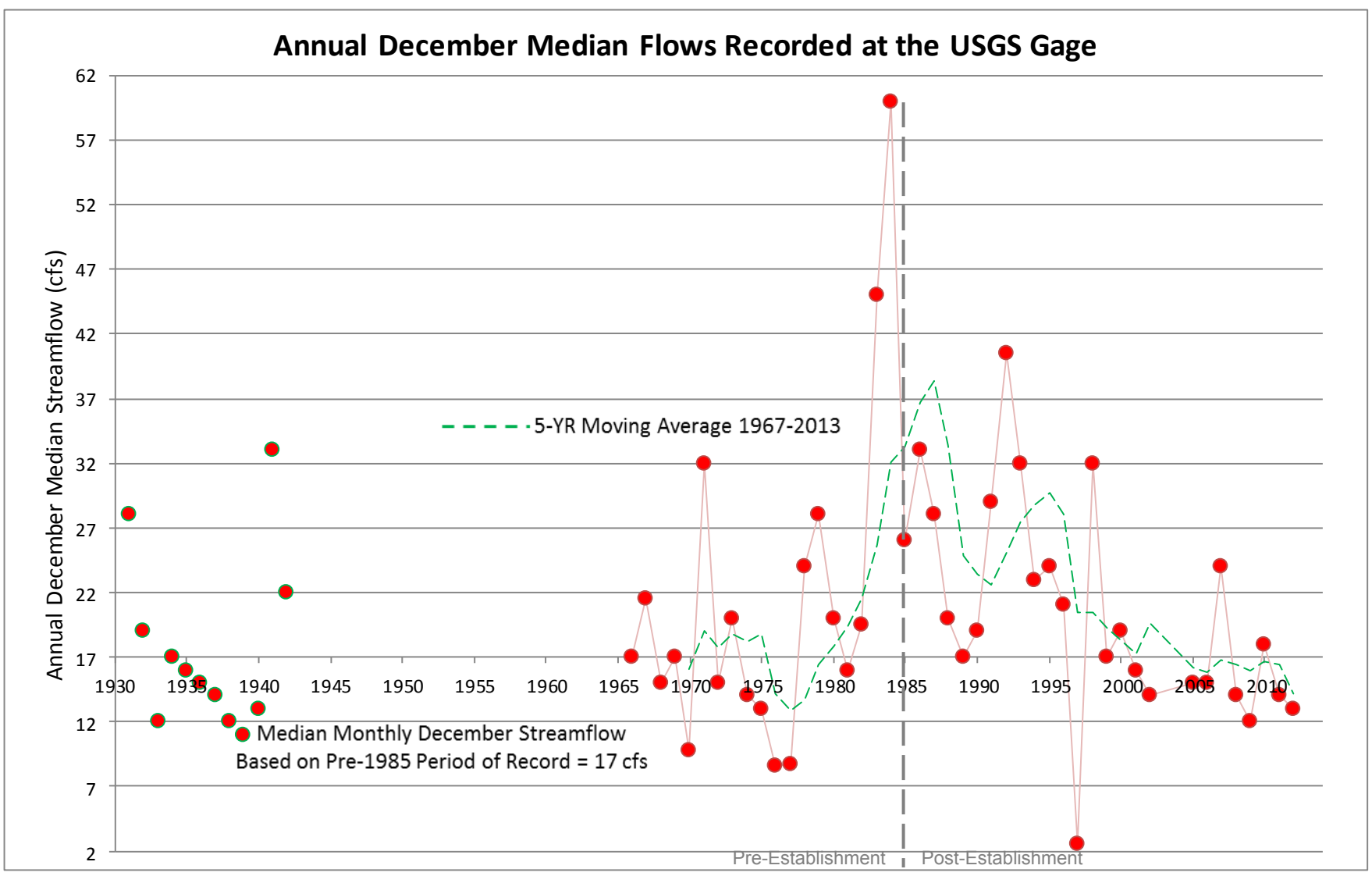


Figure 3-13:

Monthly Streamflow at USGS Gage #09473000: December

February 2014
ACWA Report

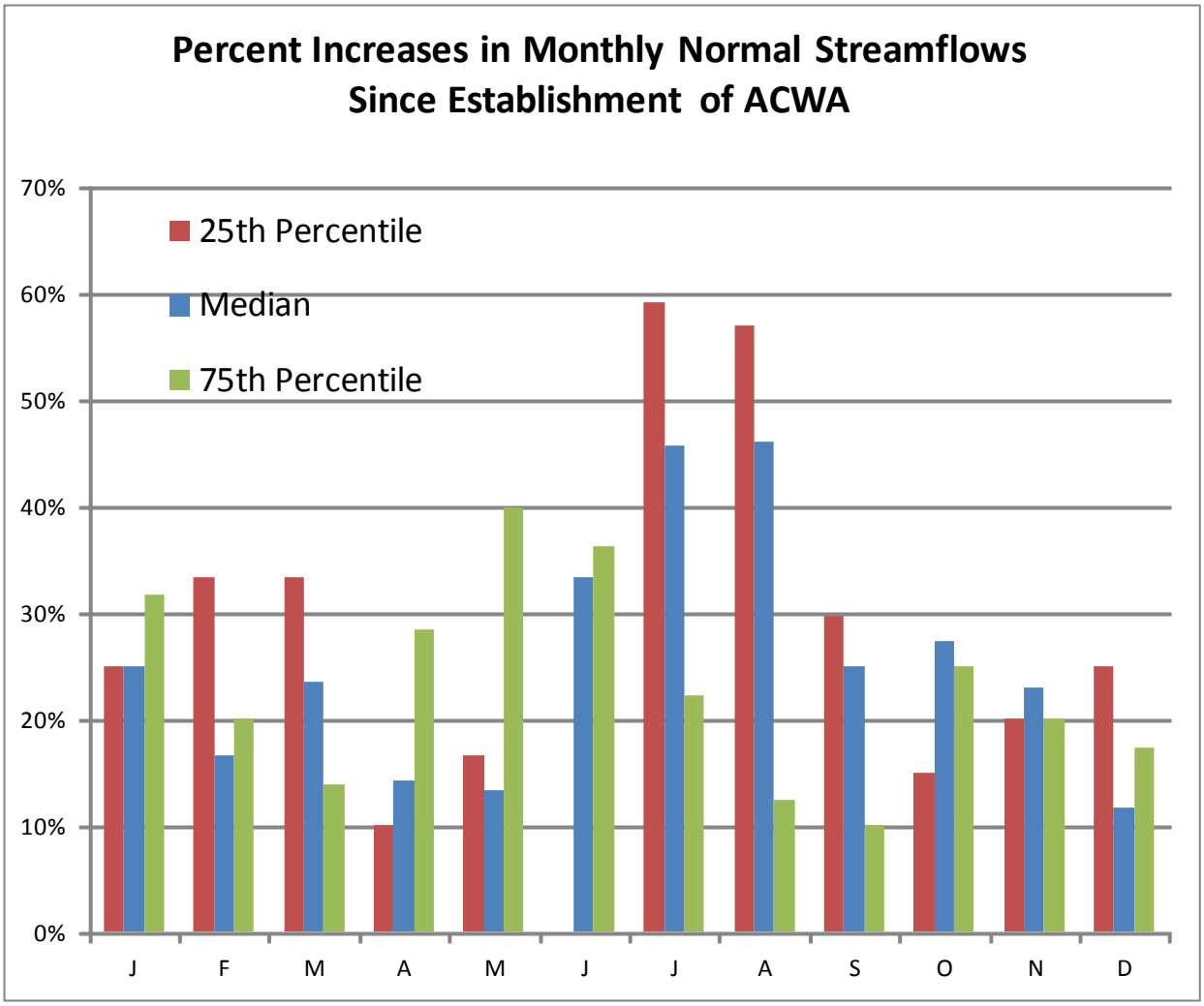
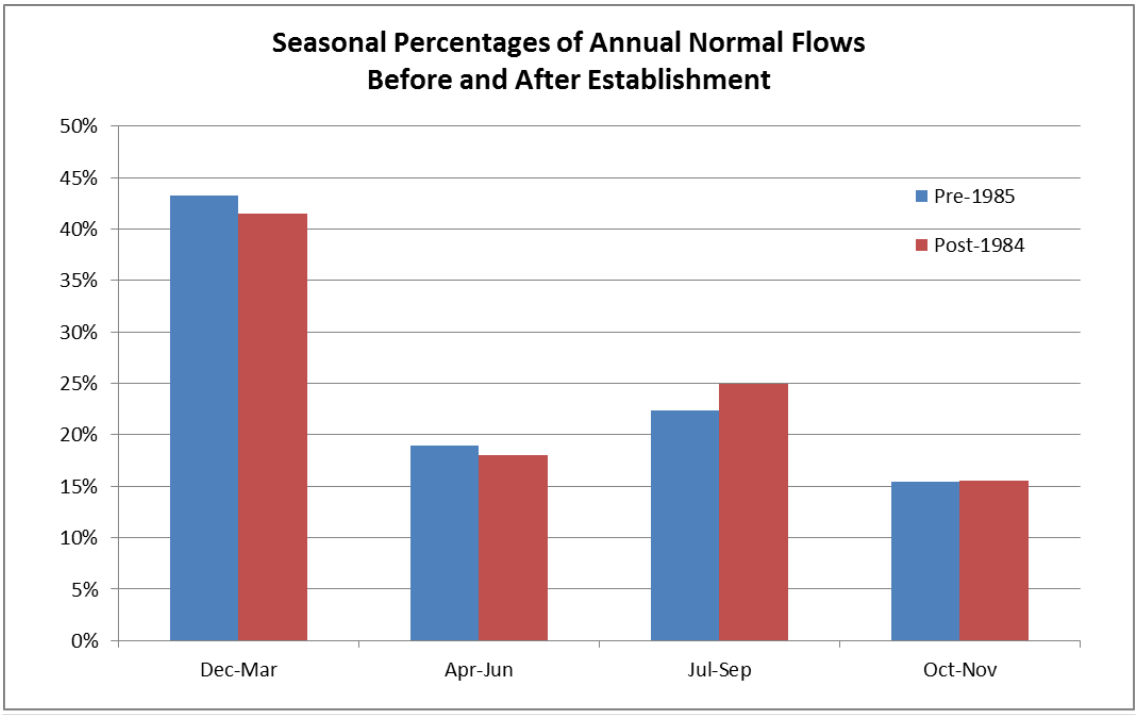


Figure 3-14:
Percent Increases of Monthly Normal Flows

February 2014
ACWA Report



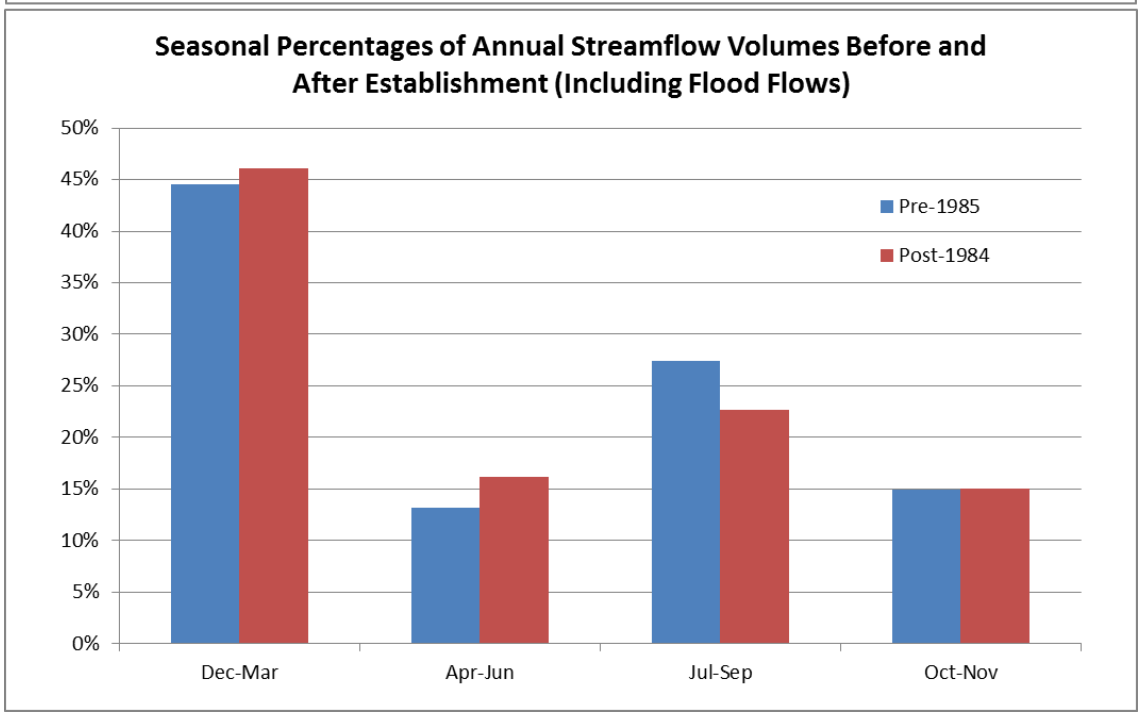


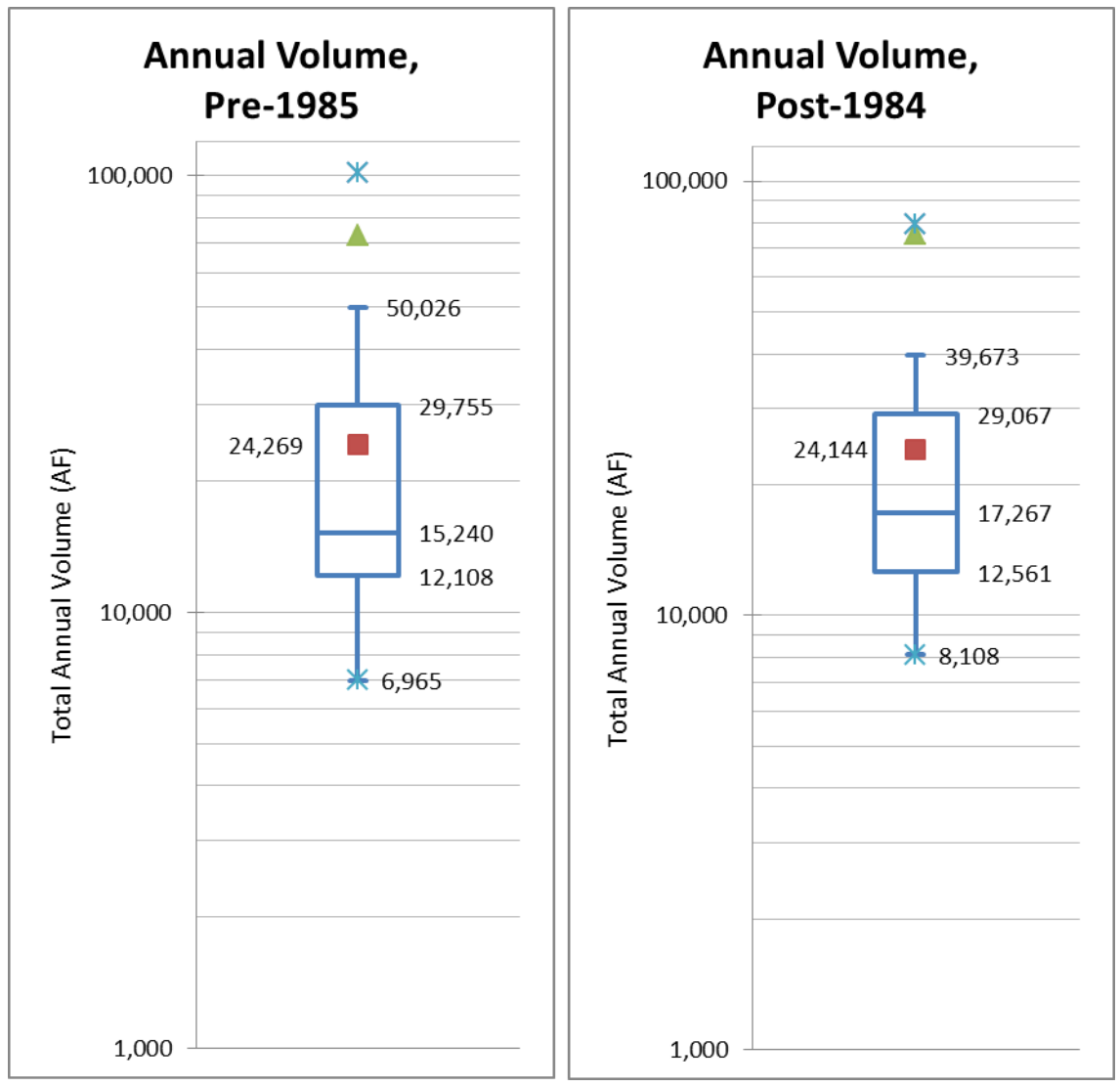
Figure 3-15:
Comparison of Seasonal Distributions of Streamflows (Pre-1985 vs. Post-1984)

February 2014
ACWA Report

Annual Streamflow Volumes USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements)	28	26
Minimum (AF)	6,965	8,108
25th Percentile (AF)	12,108	12,561
Median (AF)	15,240	17,267
75th Percentile (AF)	29,755	29,067
Maximum (AF)	101,500	79,709
IQR [2] (AF)	17,647	16,506
Median Absolute Deviation (AF)	5,430	6,914
Mean (AF)	24,269	24,144
Standard Deviation (AF)	21,172	18,421
Statistically Similar Sets of Measurements?	Yes	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

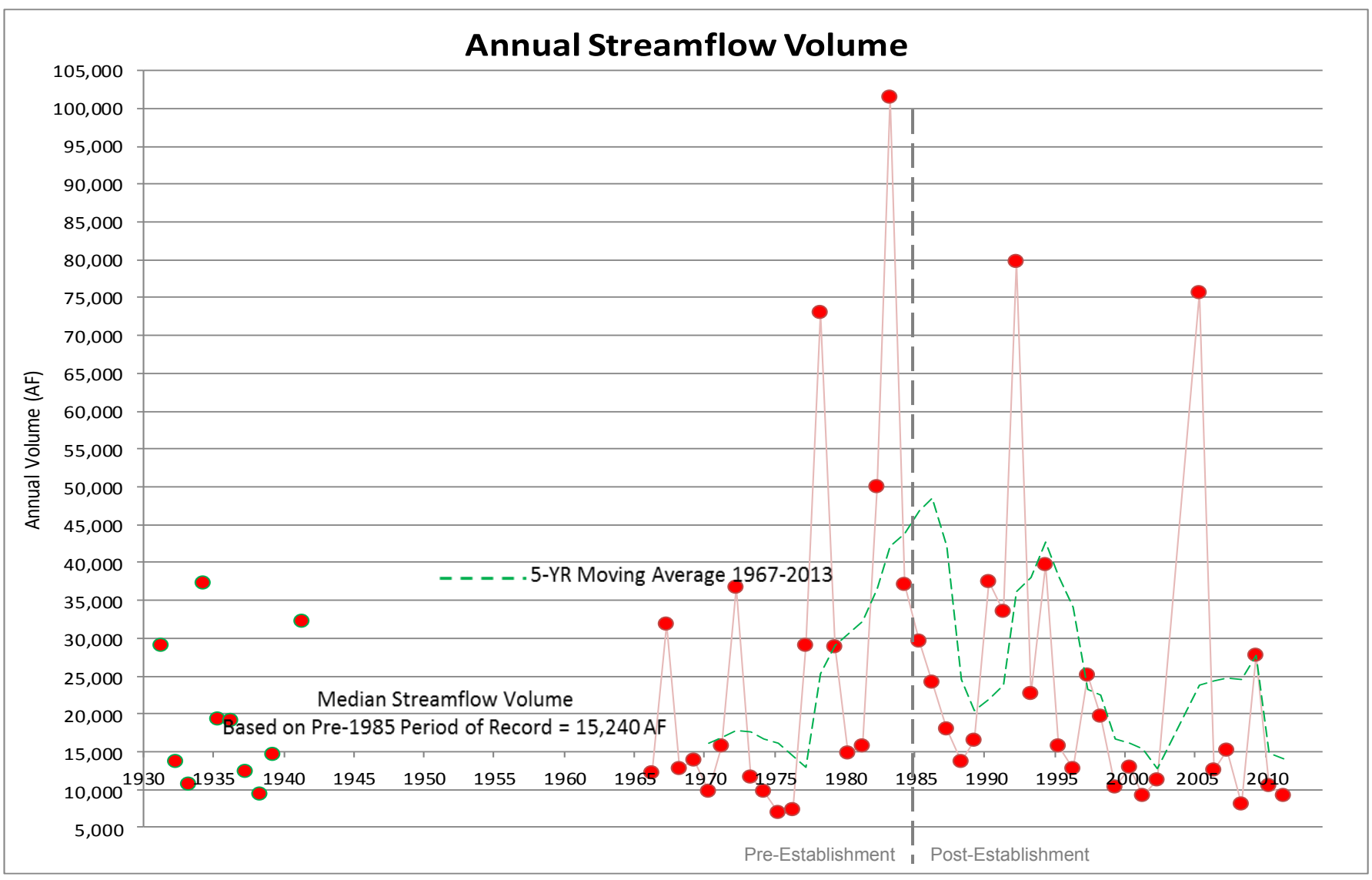


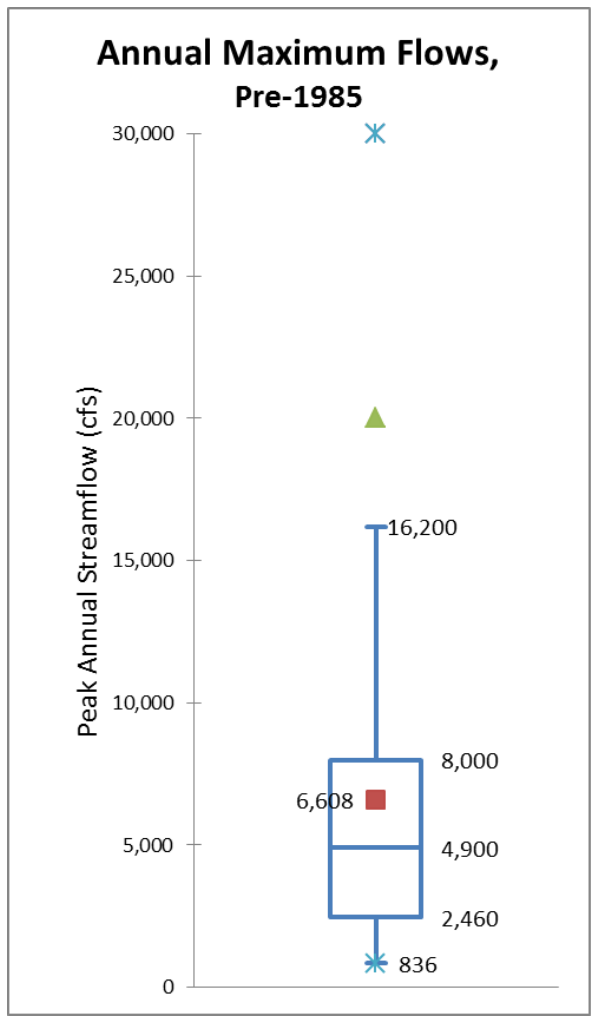
Figure 3-16:
Annual Streamflow at USGS Gage #09473000

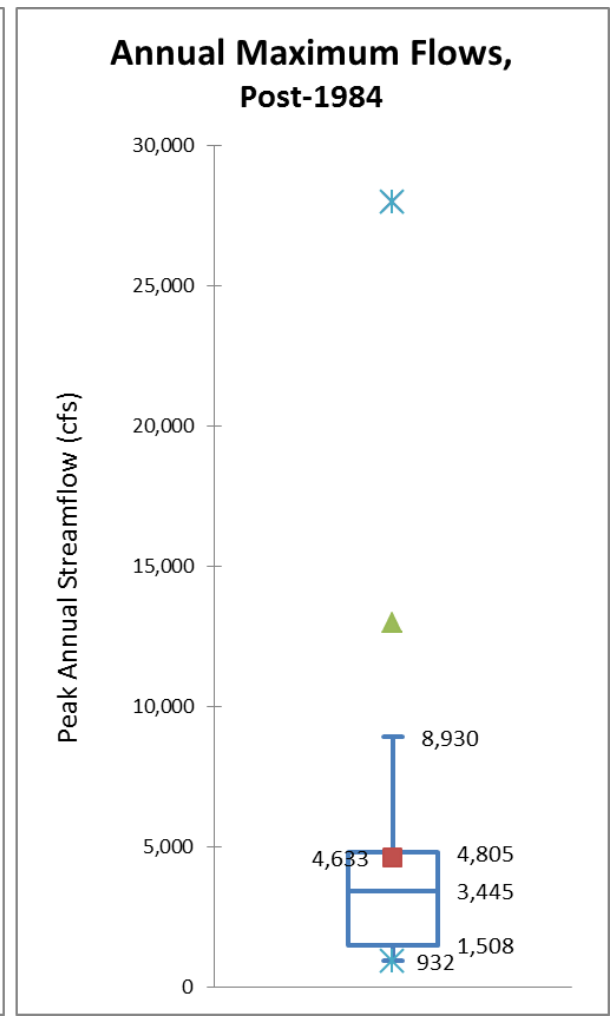
February 2014
ACWA Report

Annual Maximum Flows USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements)	35	28
Minimum (cfs)	836	932
25th Percentile (cfs)	2,460	1,508
Median (cfs)	4,900	3,445
75th Percentile (cfs)	8,000	4,805
Maximum (cfs)	30,000	28,000
IQR [2] (cfs)	5,540	3,298
Median Absolute Deviation (cfs)	2,530	1,900
Mean (cfs)	6,608	4,633
Standard Deviation (cfs)	6,183	5,396
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

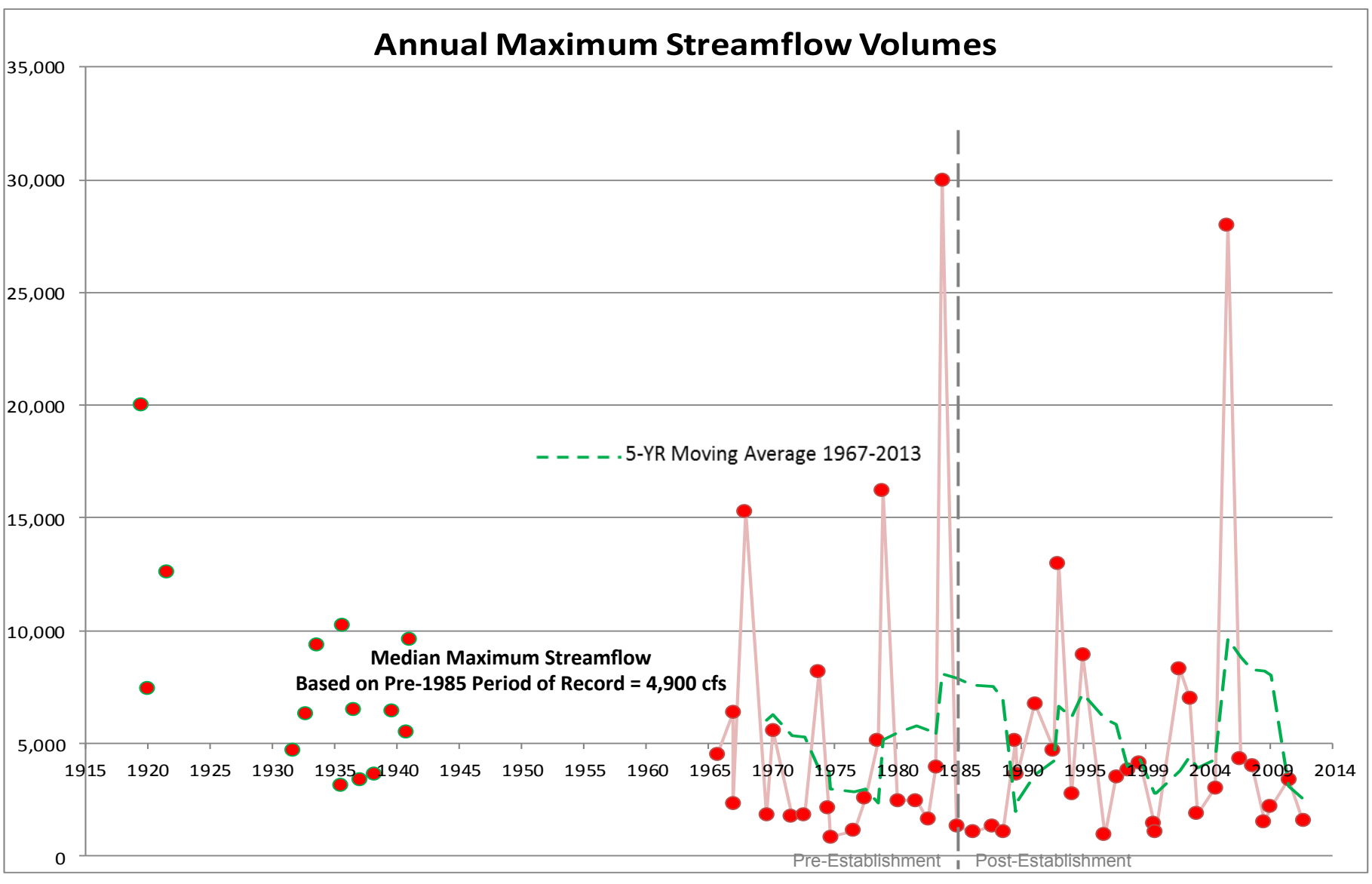


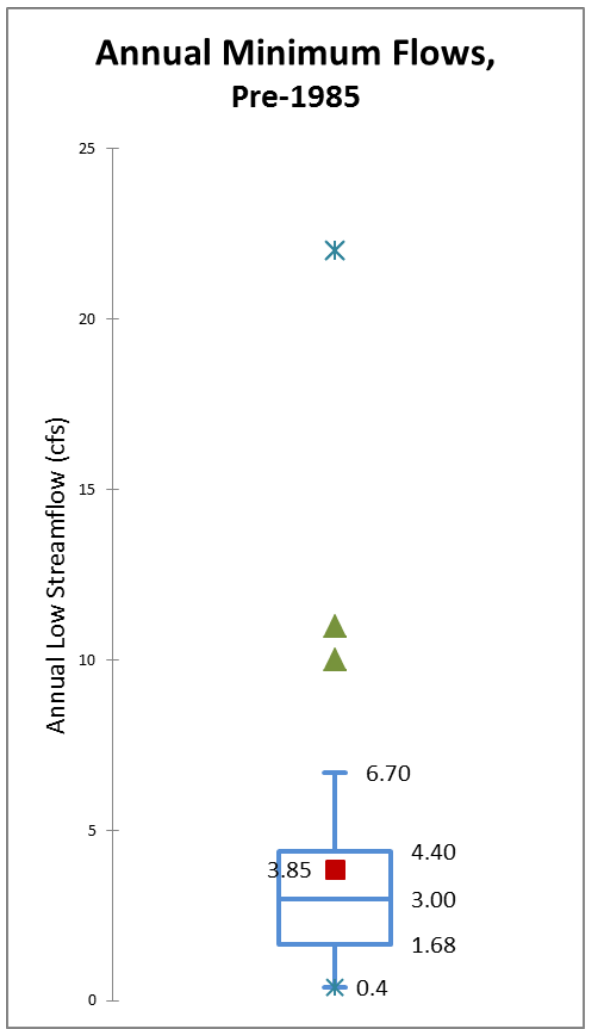
Figure 3-17:
Annual Maximum Flows at USGS Gage #09473000

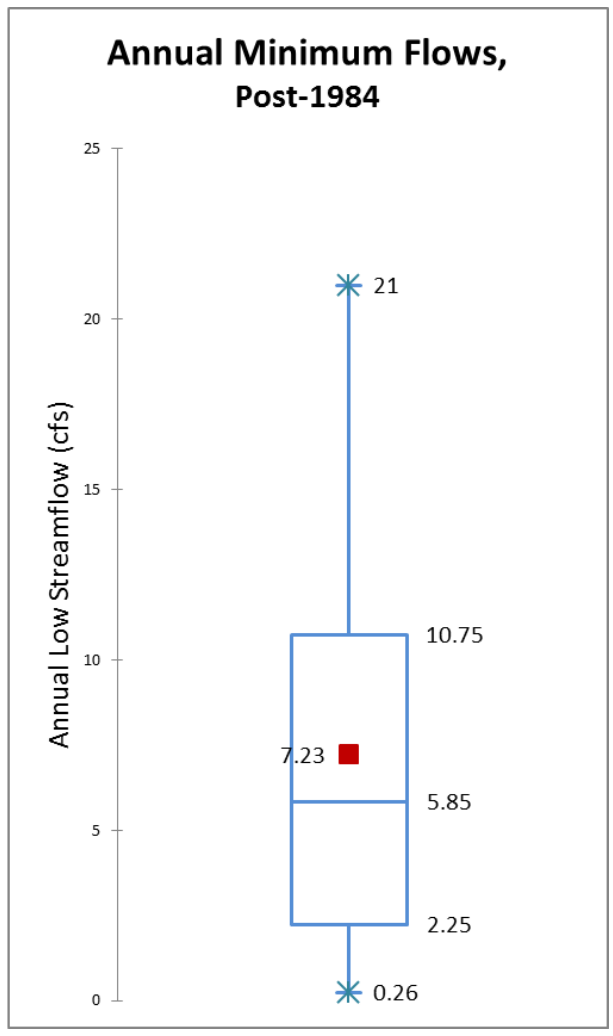
February 2014
ACWA Report

Annual Minimum Flows USGS Gage No. 09473000		
Period of Record [1]	**Pre-1985**	**Post-1984**
N (Number of measurements)	32	26
Minimum (cfs)	0.40	0.26
25th Percentile (cfs)	1.68	2.25
Median (cfs)	3	5.85
75th Percentile (cfs)	4.40	10.75
Maximum (cfs)	22	21
IQR [2] (cfs)	2.73	8.5
Median Absolute Deviation (cfs)	1.45	4.05
Mean (cfs)	3.85	7.23
Standard Deviation (cfs)	4.15	5.95
Statistically Similar Sets of Measurements?	No	

[1] The "pre-1985" period of record is 1932-1940, 1942, and 1967-1984. The "Post –1984" period is 1985-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

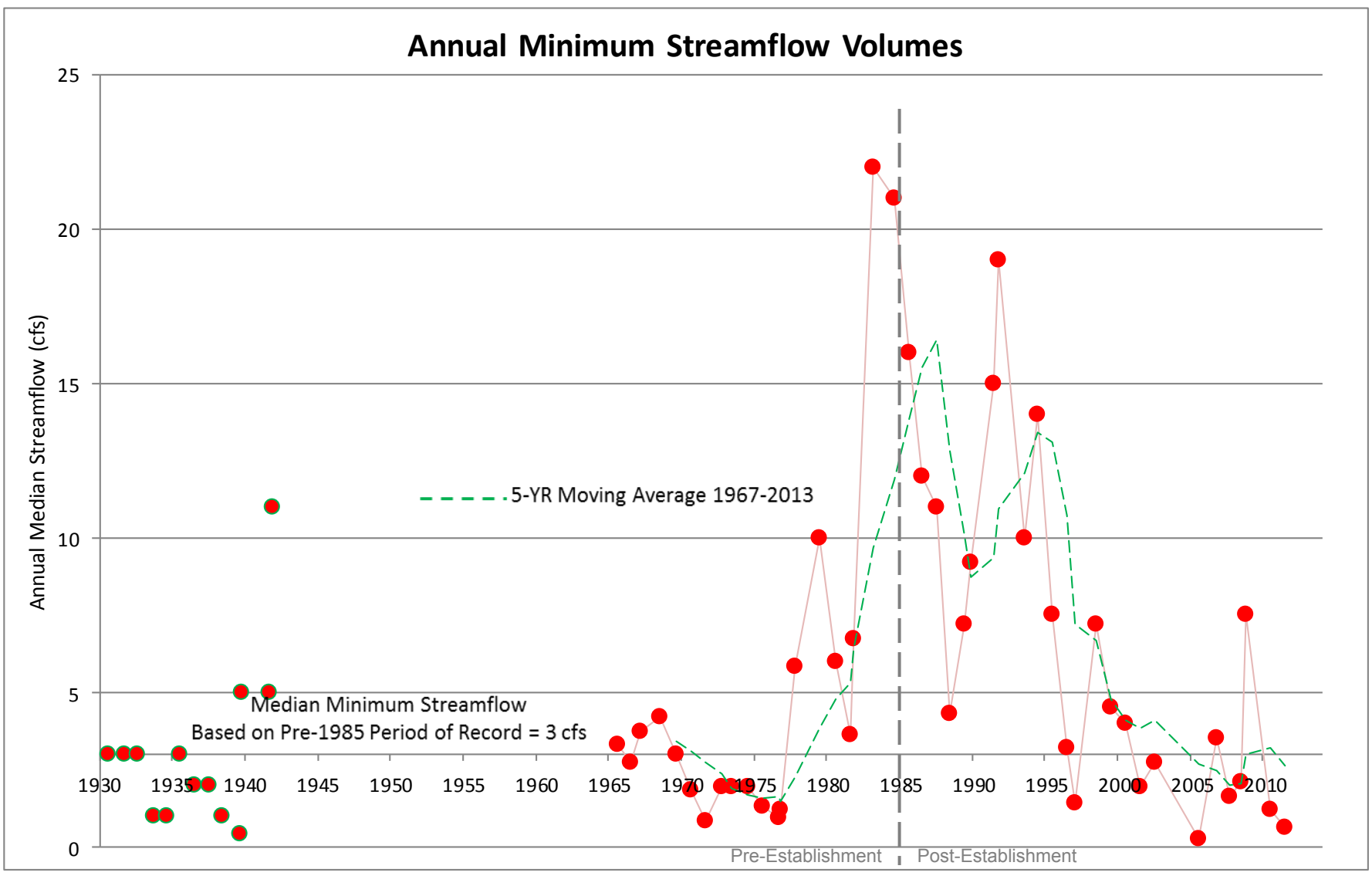


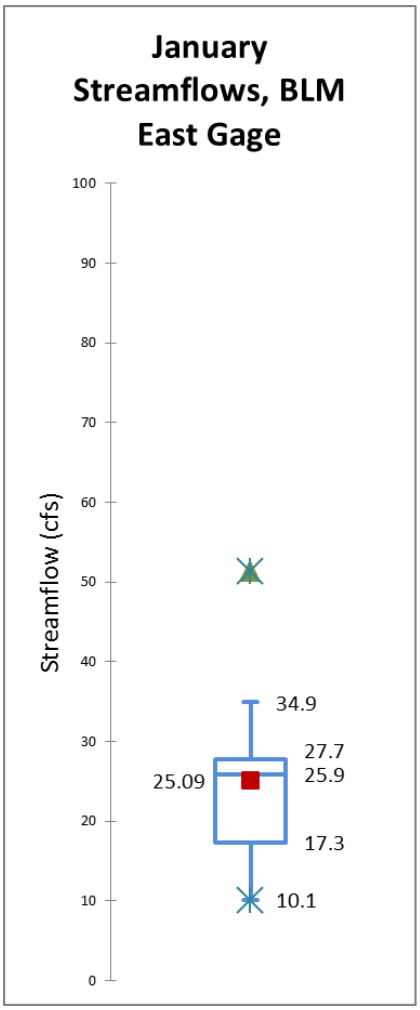
Figure 3-18:
Annual Minimum Flows at USGS Gage #09473000

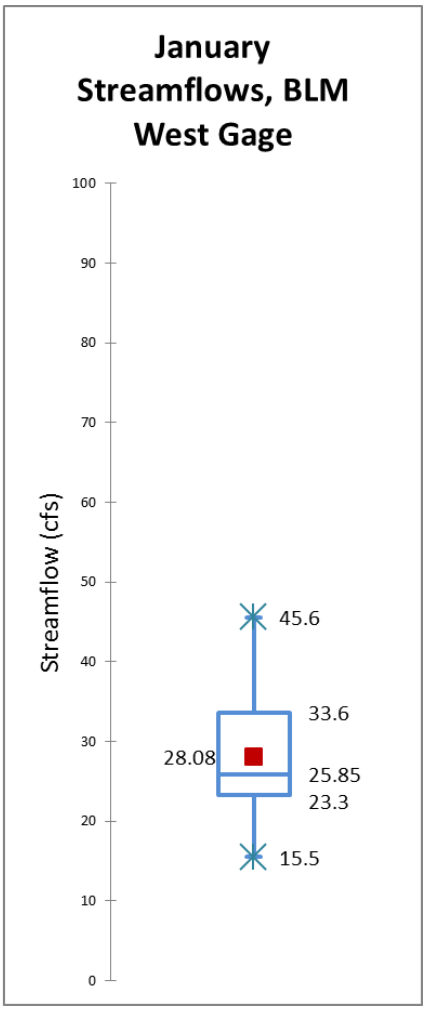
February 2014
ACWA Report

January Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	21	20
Minimum (cfs)	10.1	15.5
25th Percentile (cfs)	17.3	23.3
Median (cfs)	25.9	25.85
75th Percentile (cfs)	27.7	33.6
Maximum (cfs)	51.3	45.6
IQR [2] (cfs)	10.4	10.3
Median Absolute Deviation (cfs)	5.1	4.15
Mean (cfs)	25.09	28.08
Standard Deviation (cfs)	8.76	8.76
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1982-1995.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

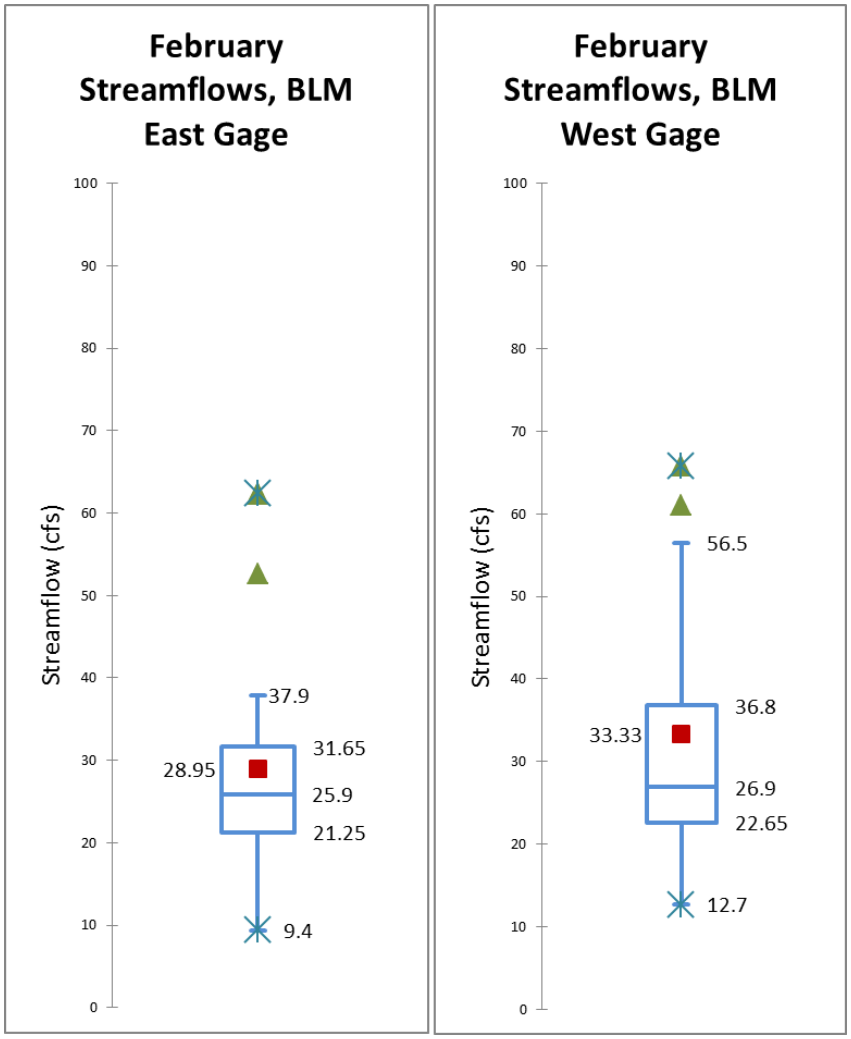
Figure 3-19: Monthly Streamflow at BLM East and BLM West Gages: January

February 2014
ACWA Report

February Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	23	15
Minimum (cfs)	9.4	12.7
25th Percentile (cfs)	21.25	22.65
Median (cfs)	25.9	26.9
75th Percentile (cfs)	31.65	36.8
Maximum (cfs)	62.4	65.7
IQR [2] (cfs)	10.4	14.15
Median Absolute Deviation (cfs)	4.7	6.4
Mean (cfs)	28.95	33.33
Standard Deviation (cfs)	13.57	15.89
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1983-1995.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



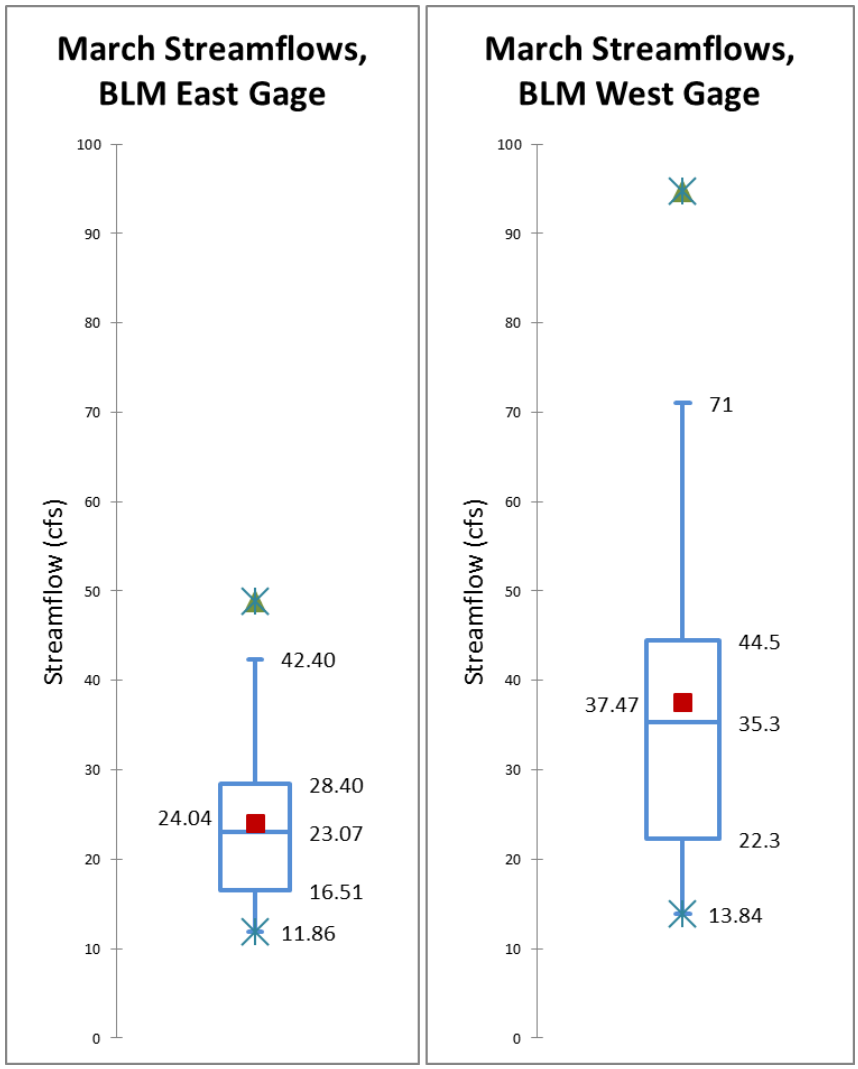
✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

Figure 3-20: Monthly Streamflow at BLM East and BLM West Gages: February

March Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	30	25
Minimum (cfs)	11.86	13.84
25th Percentile (cfs)	16.51	22.3
Median (cfs)	23.07	35.3
75th Percentile (cfs)	28.4	44.5
Maximum (cfs)	48.8	94.7
IQR [2] (cfs)	11.89	22.2
Median Absolute Deviation (cfs)	6.4	11.5
Mean (cfs)	24.04	37.47
Standard Deviation (cfs)	9.21	19.32
Statistically Similar Sets of Measurements?	No	

[1] The Period of Record is 1981-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



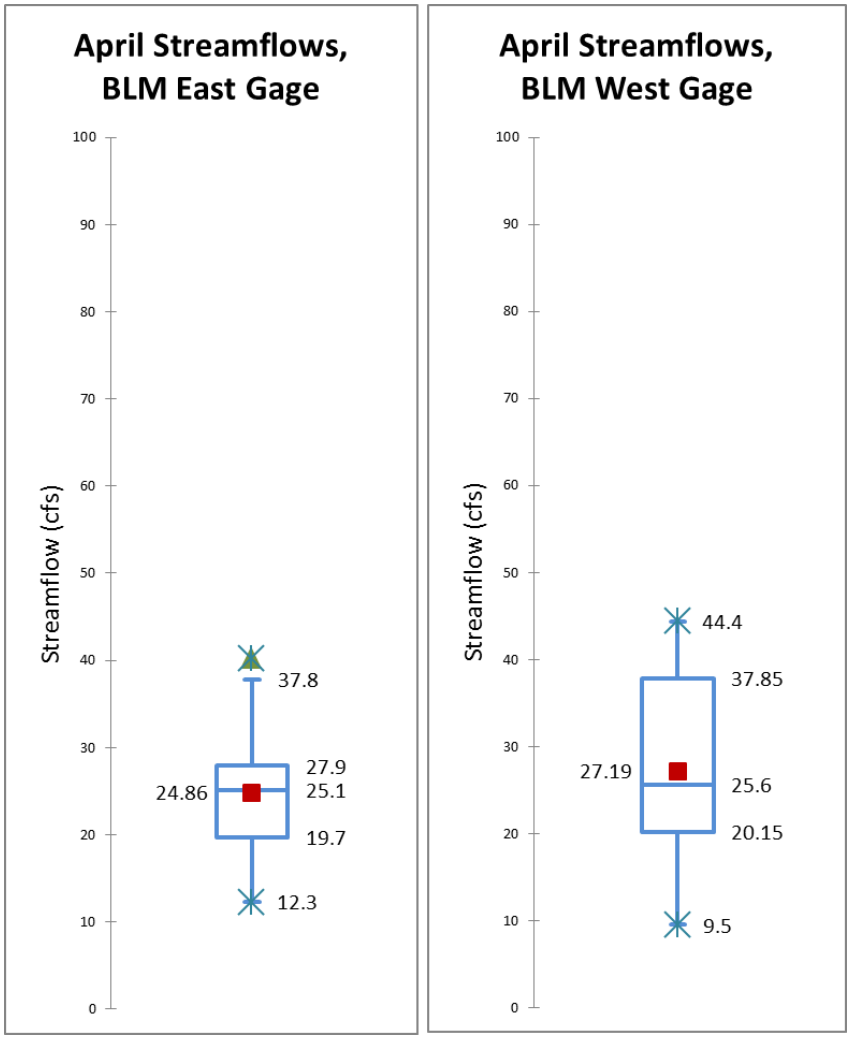
✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

Figure 3-21: Monthly Streamflow at BLM East and BLM West Gages: March

April Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	27	22
Minimum (cfs)	12.3	9.5
25th Percentile (cfs)	19.7	20.15
Median (cfs)	25.1	25.6
75th Percentile (cfs)	27.9	37.85
Maximum (cfs)	40.2	44.4
IQR [2] (cfs)	8.2	17.7
Median Absolute Deviation (cfs)	5.1	10.25
Mean (cfs)	24.86	27.19
Standard Deviation (cfs)	6.99	12
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1982-1995.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

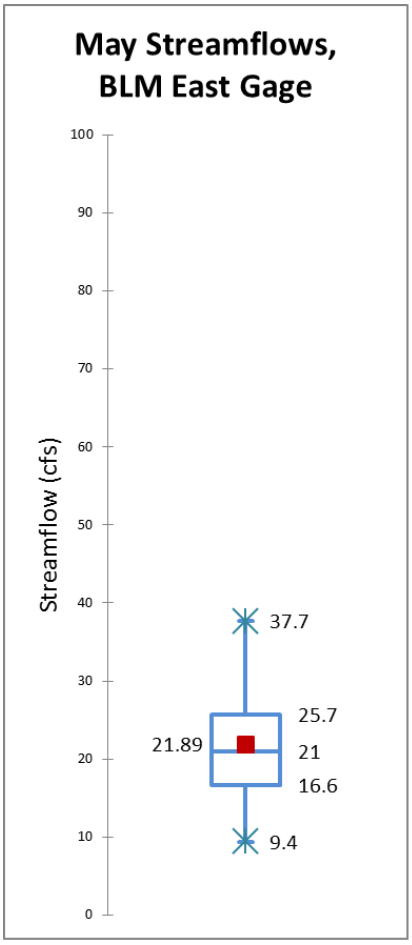
Figure 3-22: Monthly Streamflow at BLM East and BLM West Gages: April

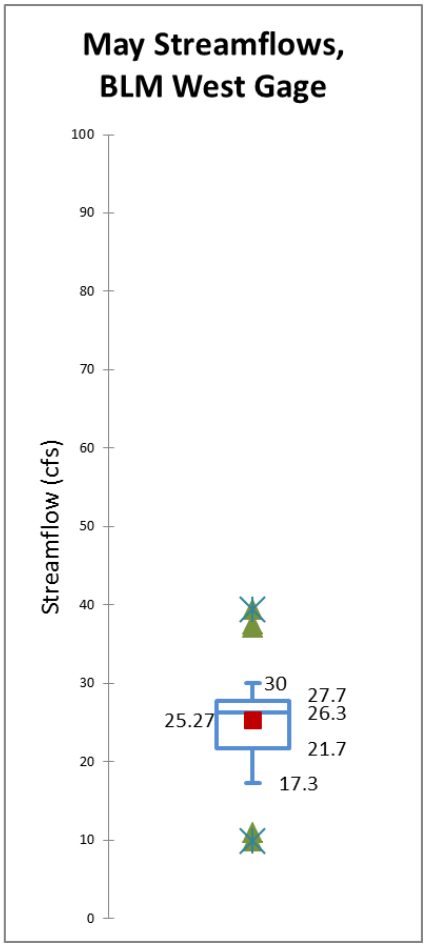
February 2014
ACWA Report

May Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	21	19
Minimum (cfs)	9.4	9.8
25th Percentile (cfs)	16.6	21.7
Median (cfs)	21	26.3
75th Percentile (cfs)	25.7	27.7
Maximum (cfs)	37.7	39.4
IQR [2] (cfs)	9.1	6
Median Absolute Deviation (cfs)	4.7	3.7
Mean (cfs)	21.89	25.27
Standard Deviation (cfs)	7.56	7.85
Statistically Similar Sets of Measurements?	No	

[1] The Period of Record is 1983-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

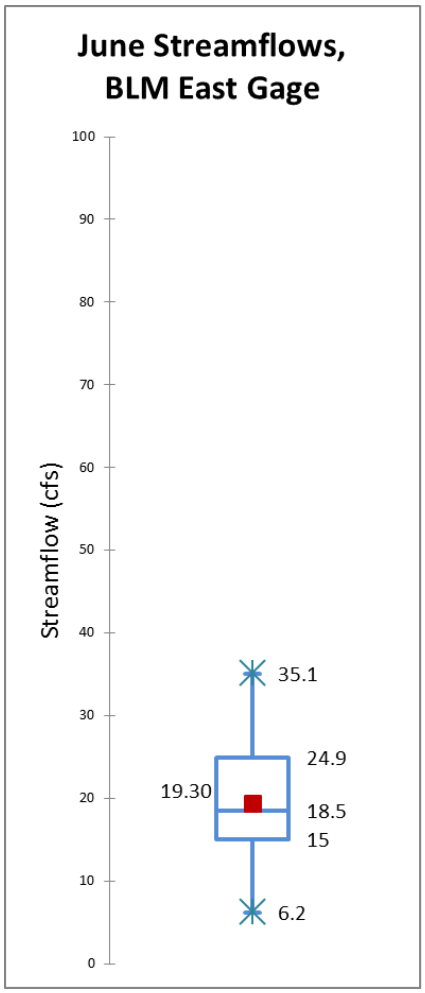
Figure 3-23: Monthly Streamflow at BLM East and BLM West Gages: May

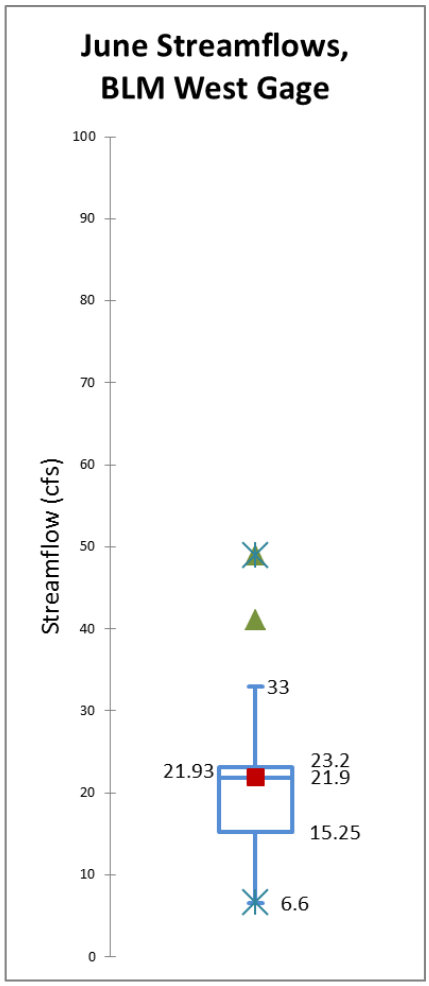
February 2014
ACWA Report

June Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	29	23
Minimum (cfs)	6.2	6.6
25th Percentile (cfs)	15	15.25
Median (cfs)	18.5	21.9
75th Percentile (cfs)	24.9	23.2
Maximum (cfs)	35.1	49
IQR [2] (cfs)	9.9	7.95
Median Absolute Deviation (cfs)	5.5	6.3
Mean (cfs)	19.30	21.93
Standard Deviation (cfs)	7.44	9.88
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1981-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

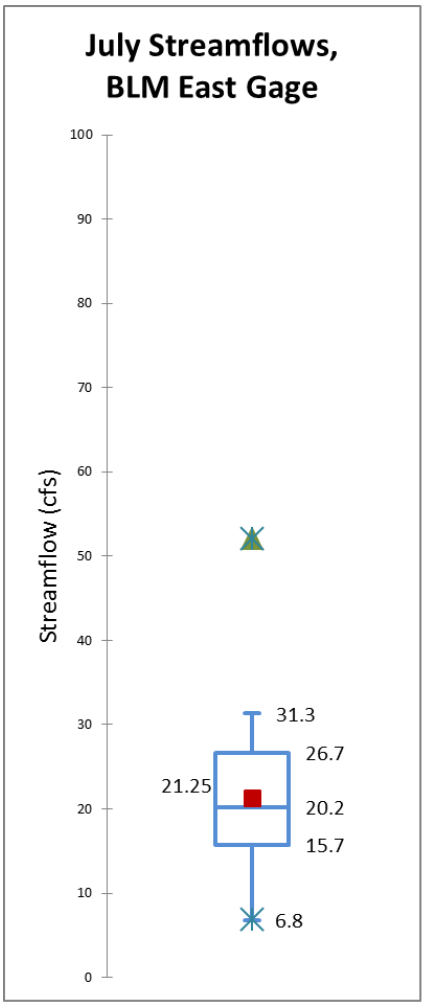
Figure 3-24: Monthly Streamflow at BLM East and BLM West Gages: June

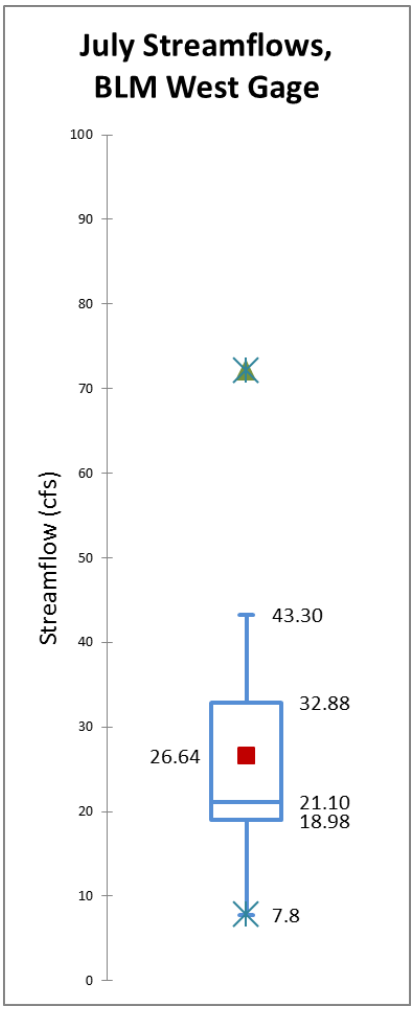
February 2014
ACWA Report

July Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	25	20
Minimum (cfs)	6.8	7.8
25th Percentile (cfs)	15.7	18.98
Median (cfs)	20.2	21.1
75th Percentile (cfs)	26.7	32.88
Maximum (cfs)	52	72.1
IQR [2] (cfs)	11	13.9
Median Absolute Deviation (cfs)	5.2	7.1
Mean (cfs)	21.25	26.64
Standard Deviation (cfs)	9	14.79
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1981-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

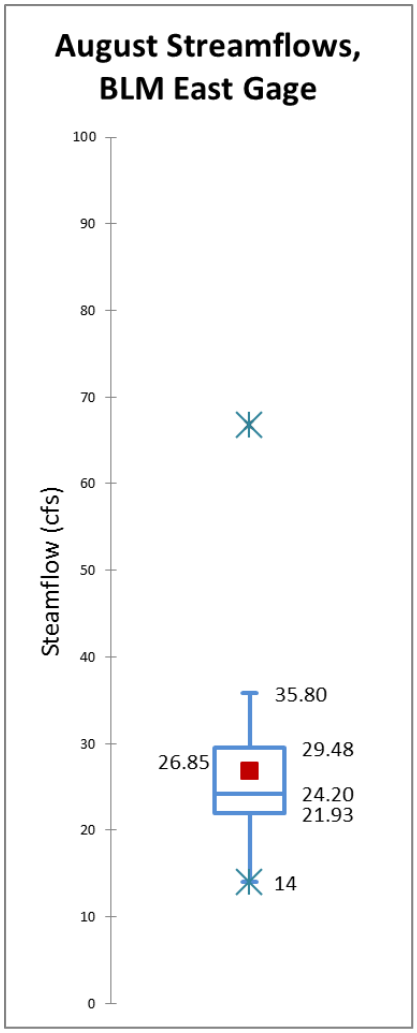
Figure 3-25: Monthly Streamflow at BLM East and BLM West Gages: July

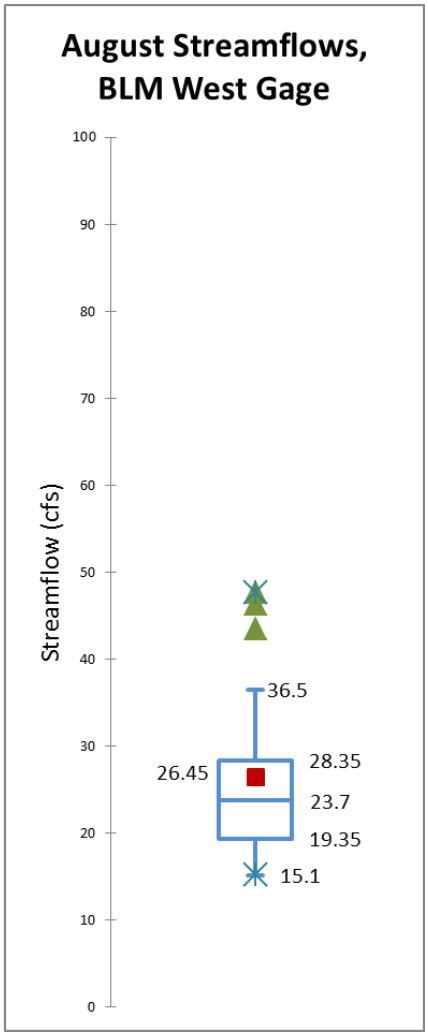
February 2014
ACWA Report

August Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	22	20
Minimum (cfs)	14	15.1
25th Percentile (cfs)	21.93	19.35
Median (cfs)	24.2	23.7
75th Percentile (cfs)	29.48	28.35
Maximum (cfs)	66.8	47.6
IQR [2] (cfs)	7.55	9
Median Absolute Deviation (cfs)	2.55	4.9
Mean (cfs)	26.85	26.45
Standard Deviation (cfs)	10.34	10.05
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1982-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

Figure 3-26:

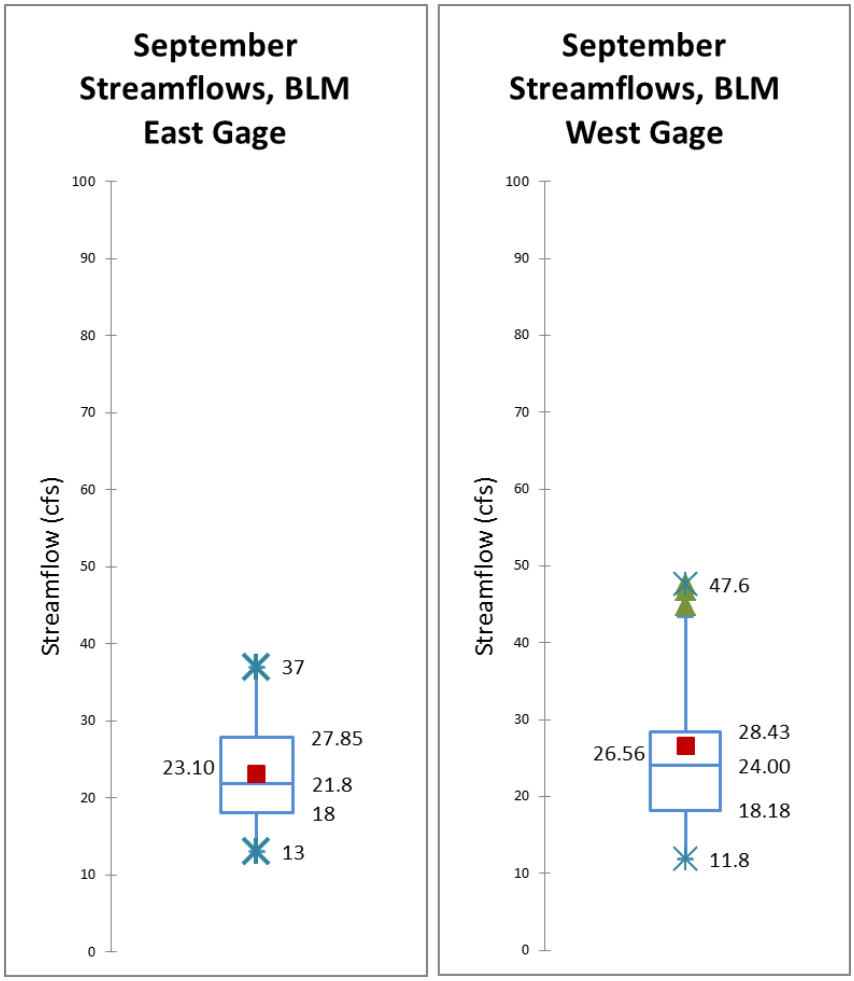
Monthly Streamflow at BLM East and BLM West Gages: August

February 2014
ACWA Report

September Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	20	22
Minimum (cfs)	13	11.8
25th Percentile (cfs)	18	18.18
Median (cfs)	21.8	24
75th Percentile (cfs)	27.85	28.43
Maximum (cfs)	37	47.6
IQR [2] (cfs)	9.85	10.25
Median Absolute Deviation (cfs)	4.3	5.4
Mean (cfs)	23.09	26.56
Standard Deviation (cfs)	6.72	10.50
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1981-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



✳	■	▲	✕
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

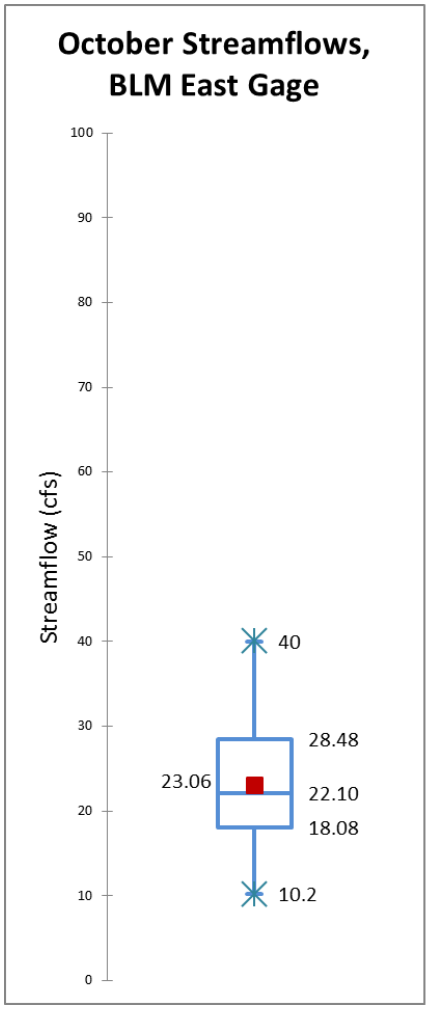
Figure 3-27: Monthly Streamflow at BLM East and BLM West Gages: September

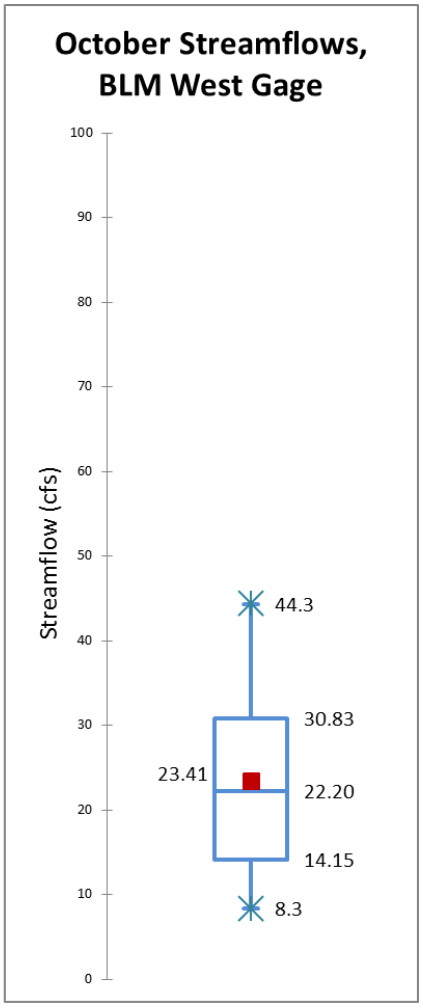
February 2014
ACWA Report

October Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	20	24
Minimum (cfs)	10.2	8.3
25th Percentile (cfs)	18.08	14.15
Median (cfs)	22.1	22.2
75th Percentile (cfs)	28.48	30.83
Maximum (cfs)	40	44.3
IQR [2] (cfs)	10.4	16.68
Median Absolute Deviation (cfs)	5.7	8.5
Mean (cfs)	23.06	23.41
Standard Deviation (cfs)	7.76	10.83
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1981-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	✕
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

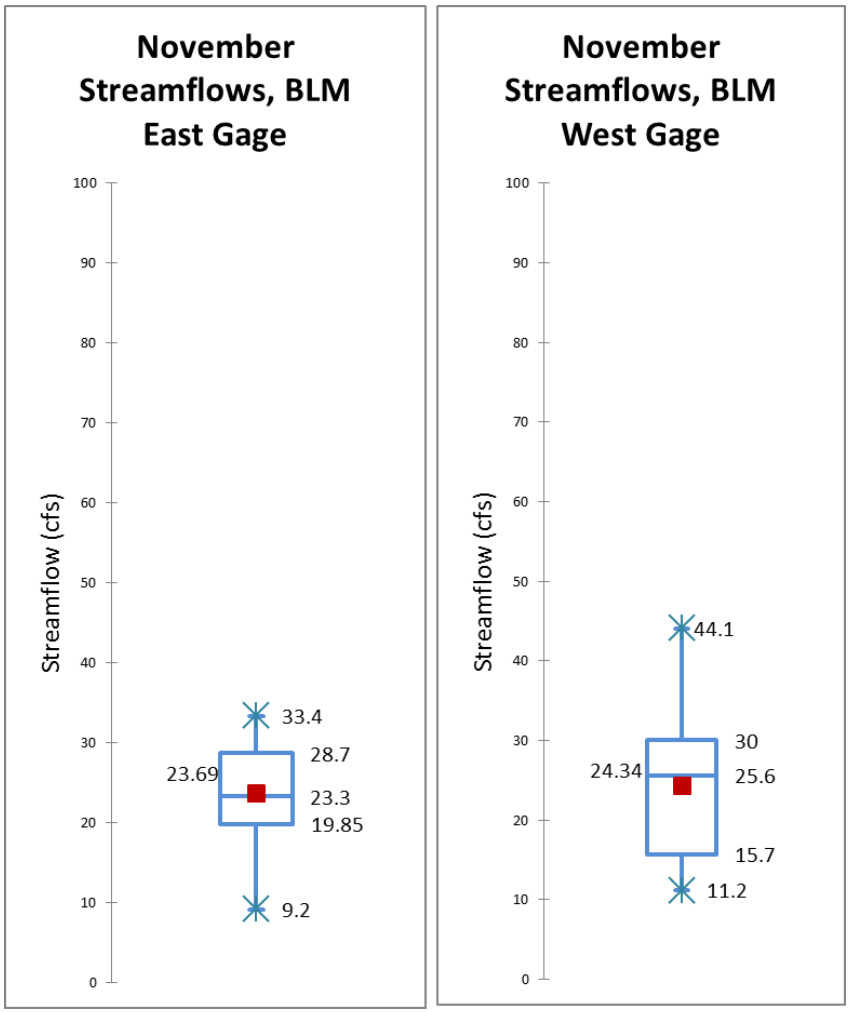
Figure 3-28: Monthly Streamflow at BLM East and BLM West Gages: October

February 2014
ACWA Report

November Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	27	20
Minimum (cfs)	9.2	11.2
25th Percentile (cfs)	19.85	15.7
Median (cfs)	23.3	25.6
75th Percentile (cfs)	28.7	30
Maximum (cfs)	33.4	44.1
IQR [2] (cfs)	8.85	14.3
Median Absolute Deviation (cfs)	5.4	7.7
Mean (cfs)	23.69	24.34
Standard Deviation (cfs)	6.31	8.98
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1982-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

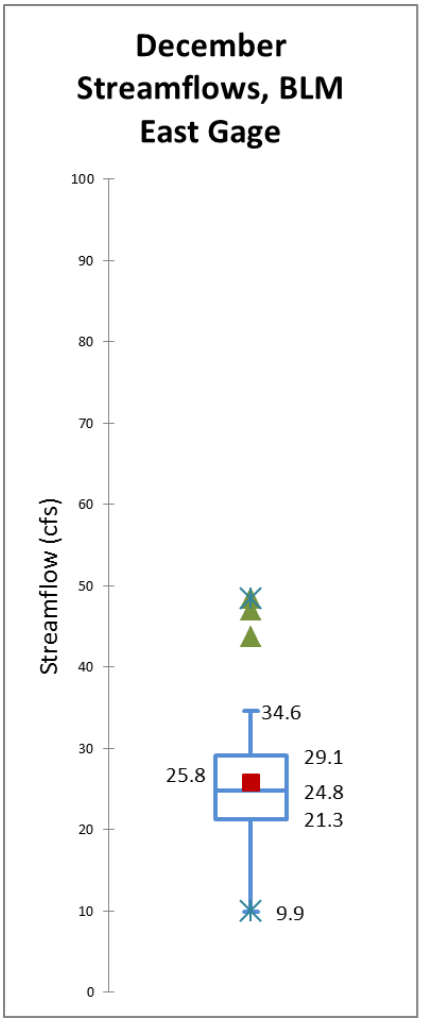
Figure 3-29: Monthly Streamflow at BLM East and BLM West Gages: November

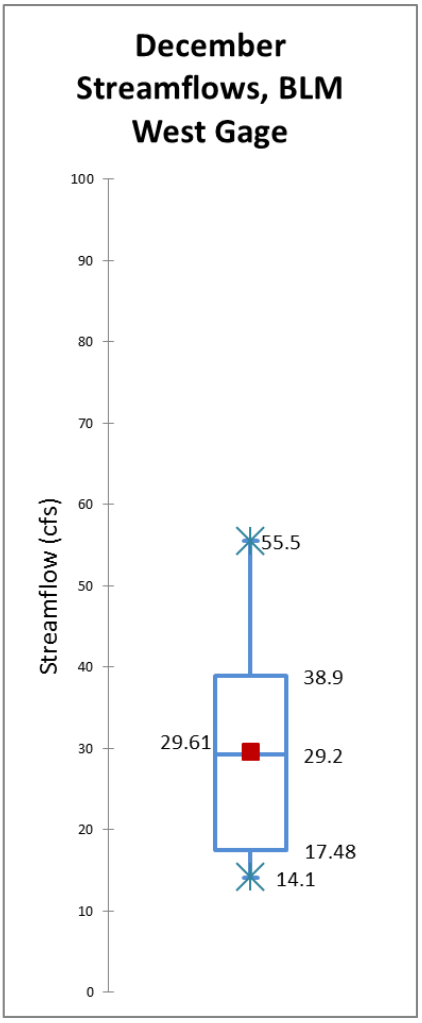
February 2014 ACWA Report

December Streamflow: BLM East Gage & BLM West Gage		
Period of Record [1]	**East Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	29	18
Minimum (cfs)	9.9	14.1
25th Percentile (cfs)	21.3	17.48
Median (cfs)	24.8	29.2
75th Percentile (cfs)	29.1	38.9
Maximum (cfs)	48.4	55.5
IQR [2] (cfs)	7.8	21.43
Median Absolute Deviation (cfs)	4	11.05
Mean (cfs)	25.8	29.61
Standard Deviation (cfs)	9.27	12.48
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1980-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

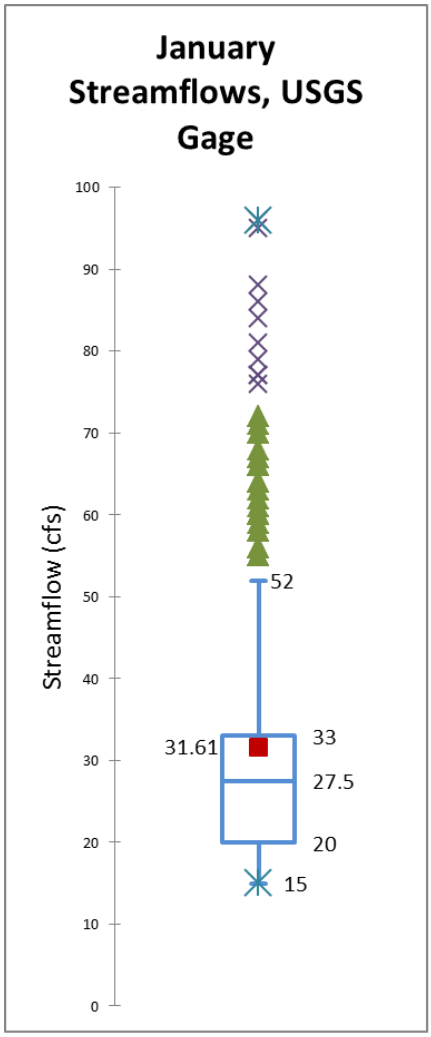
Figure 3-30: Monthly Streamflow at BLM East and BLM West Gages: December

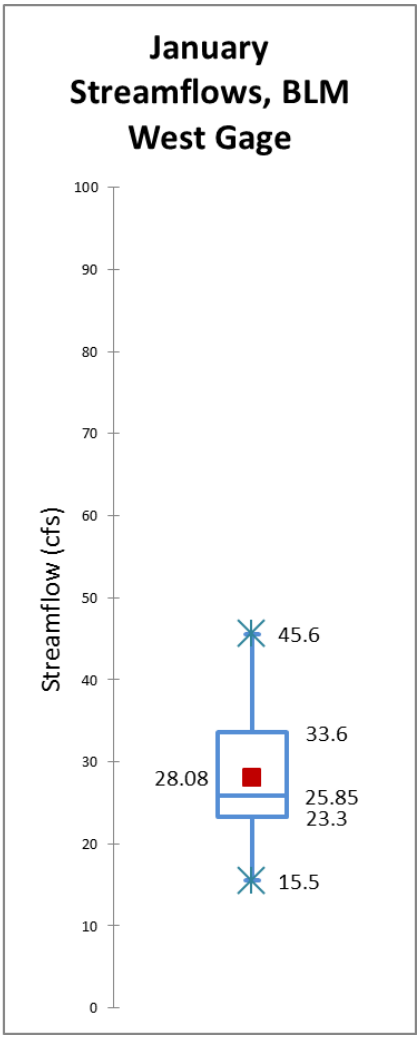
February 2014
ACWA Report

January Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	382	20
Minimum (cfs)	15	15.5
25th Percentile (cfs)	20	23.3
Median (cfs)	27.5	25.85
75th Percentile (cfs)	33	33.6
Maximum (cfs)	96	45.6
IQR [2] (cfs)	13	10.3
Median Absolute Deviation (cfs)	7.5	4.15
Mean (cfs)	31.6	28.08
Standard Deviation (cfs)	16.04	8.76
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1982-1995.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

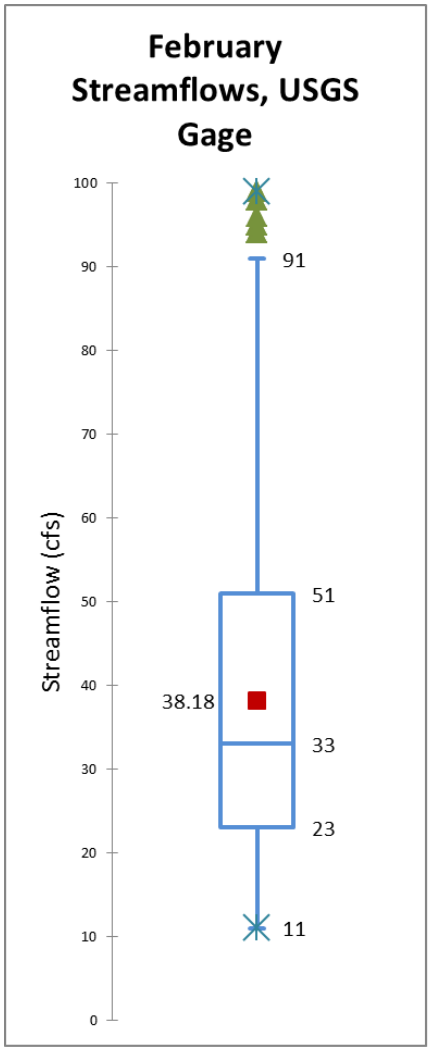
Figure 3-31: Monthly Streamflow at BLM West Gage & USGS Gage: January

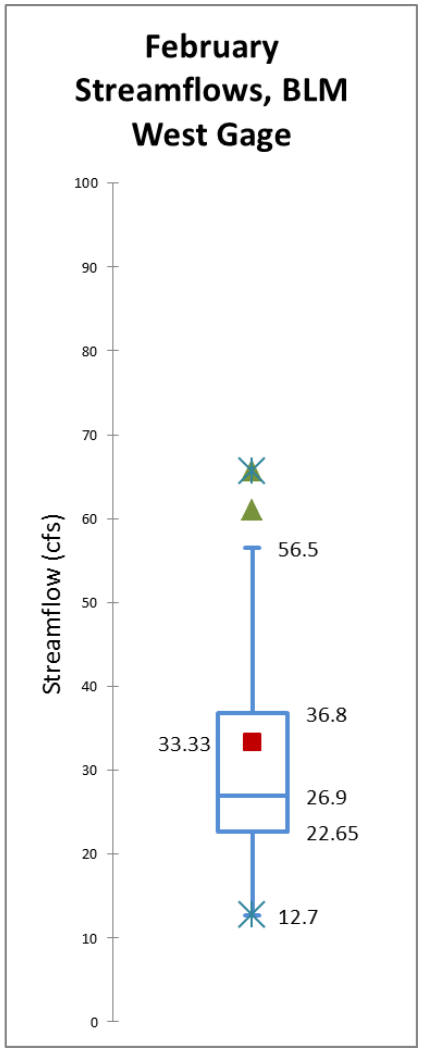
February 2014
ACWA Report

February Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	317	15
Minimum (cfs)	11	12.7
25th Percentile (cfs)	23	22.65
Median (cfs)	33	26.9
75th Percentile (cfs)	51	36.8
Maximum (cfs)	99	65.7
IQR [2] (cfs)	28	14.15
Median Absolute Deviation (cfs)	14	6.4
Mean (cfs)	38.18	33.33
Standard Deviation (cfs)	21.28	15.89
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1983-1995.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





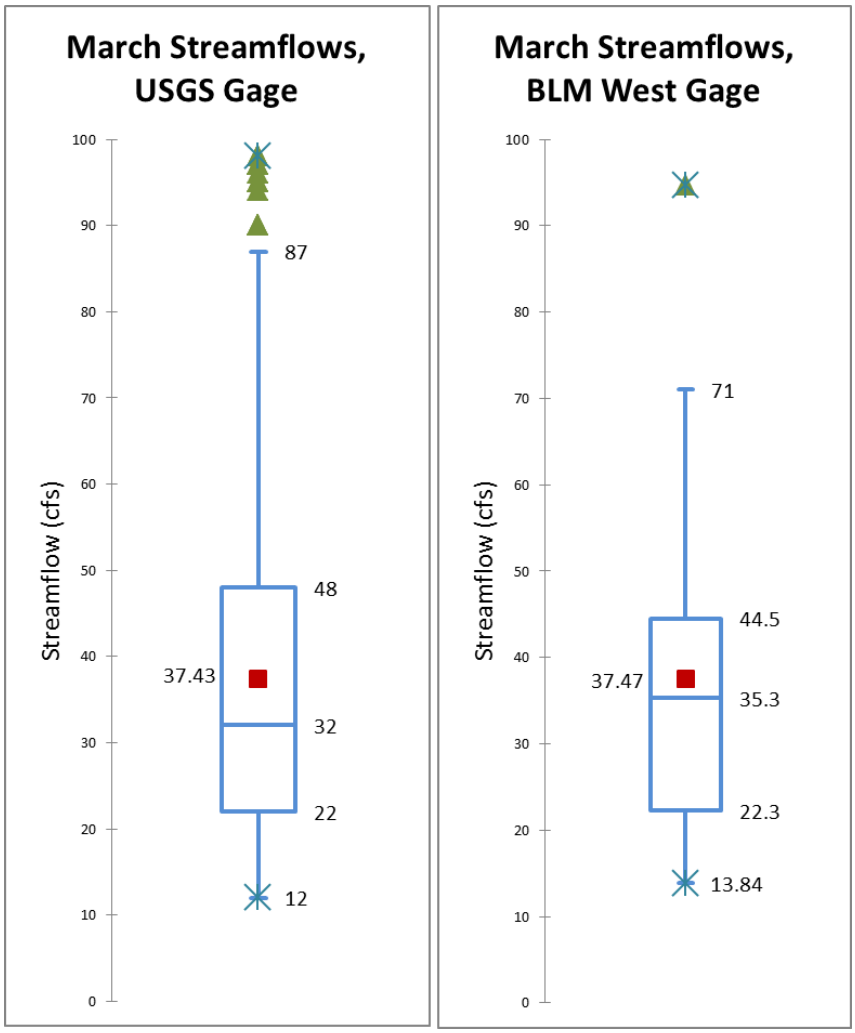
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

Figure 3-32: Monthly Streamflow at BLM West Gage & USGS Gage: February

March Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	405	25
Minimum (cfs)	12	13.84
25th Percentile (cfs)	22	22.3
Median (cfs)	32	35.3
75th Percentile (cfs)	48	44.5
Maximum (cfs)	98	94.7
IQR [2] (cfs)	26	22.2
Median Absolute Deviation (cfs)	12	11.5
Mean (cfs)	37.43	37.47
Standard Deviation (cfs)	20.85	19.32
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1981-2013.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



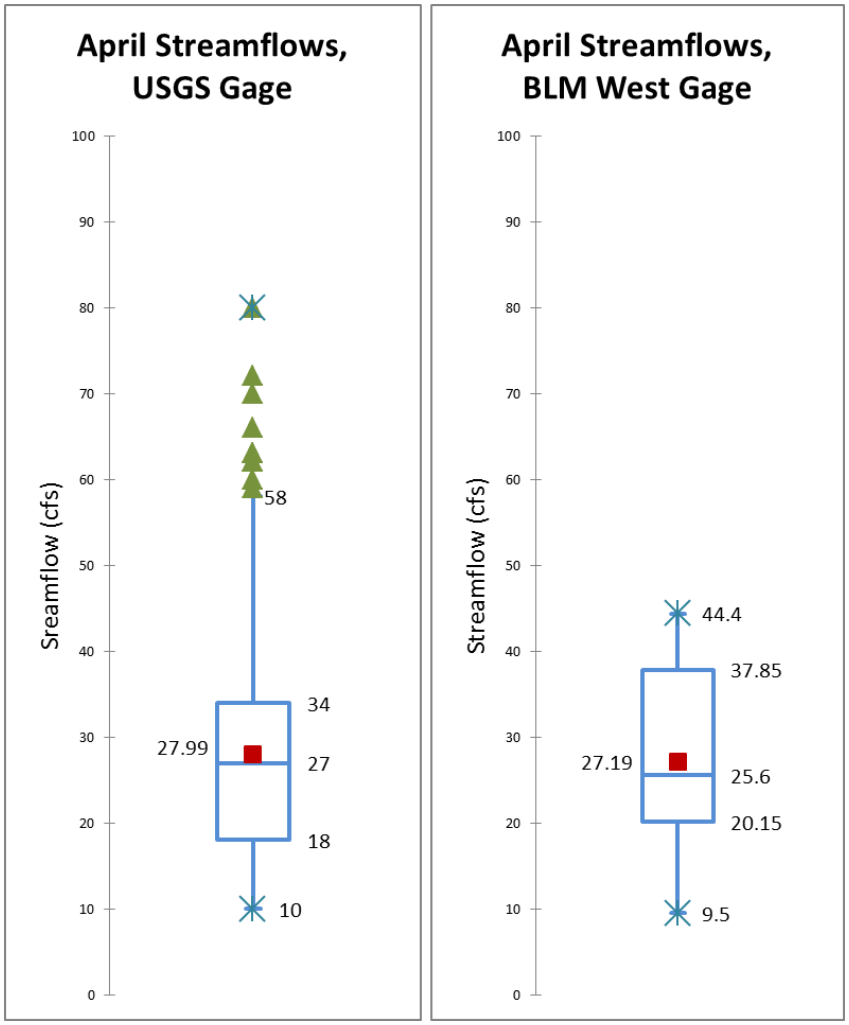
✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

Figure 3-33: Monthly Streamflow at BLM West Gage & USGS Gage: March

April Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	448	22
Minimum (cfs)	10	9.5
25th Percentile (cfs)	18	20.15
Median (cfs)	27	25.6
75th Percentile (cfs)	34	37.85
Maximum (cfs)	80	44.4
IQR [2] (cfs)	16	17.7
Median Absolute Deviation (cfs)	8	10.25
Mean (cfs)	27.99	27.19
Standard Deviation (cfs)	11.89	12
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1982-1995.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



✳	■	▲	×
Minimum &	Mean	Range	Range

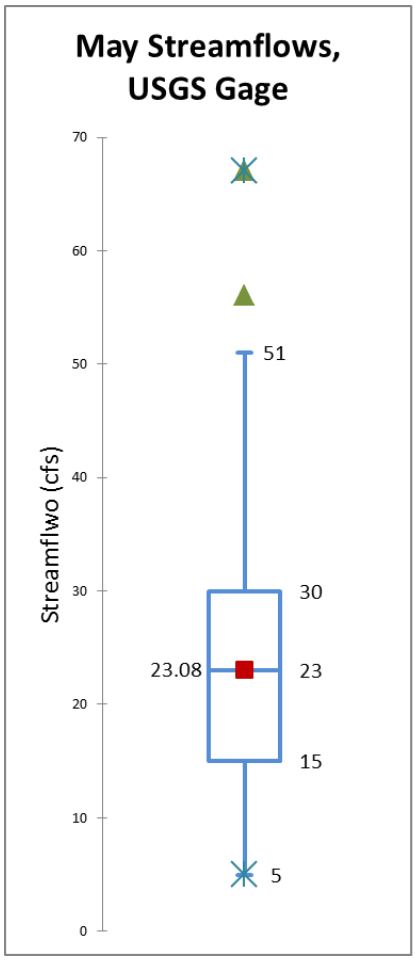
Figure 3-34: Monthly Streamflow at BLM West Gage & USGS Gage: April

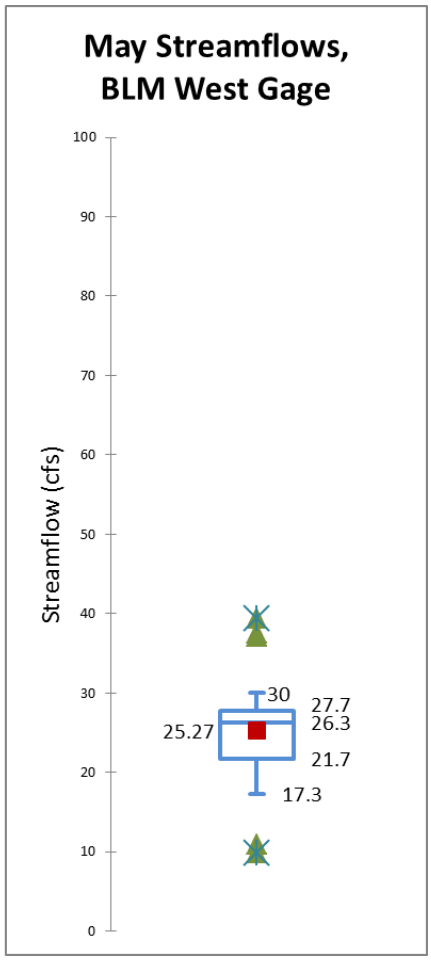
February 2014
ACWA Report

May Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	372	19
Minimum (cfs)	5	9.8
25th Percentile (cfs)	15	21.7
Median (cfs)	23	26.3
75th Percentile (cfs)	30	27.7
Maximum (cfs)	67	39.4
IQR [2] (cfs)	15	6
Median Absolute Deviation (cfs)	7	3.7
Mean (cfs)	23.08	25.27
Standard Deviation (cfs)	9.99	7.85
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1983-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

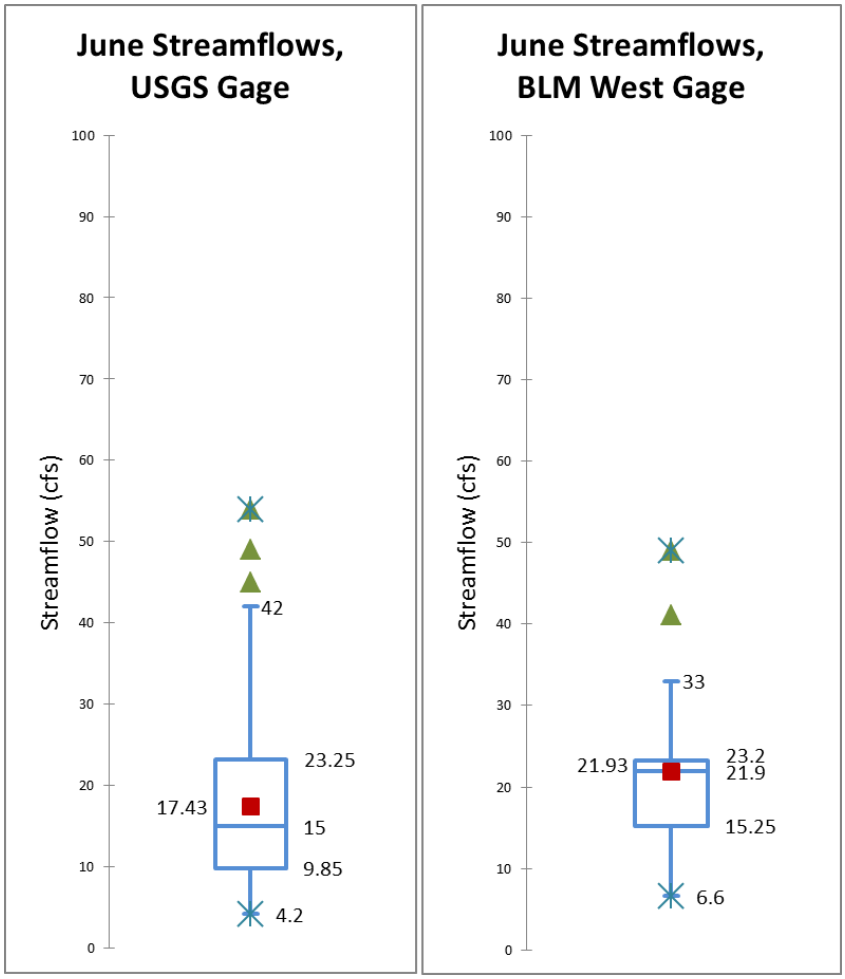
Figure 3-35: Monthly Streamflow at BLM West Gage & USGS Gage: May

February 2014
ACWA Report

June Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	420	23
Minimum (cfs)	4.2	6.6
25th Percentile (cfs)	9.85	15.25
Median (cfs)	15	21.9
75th Percentile (cfs)	23.25	23.2
Maximum (cfs)	54	49
IQR [2] (cfs)	13.4	7.95
Median Absolute Deviation (cfs)	6.35	6.3
Mean (cfs)	17.43	21.93
Standard Deviation (cfs)	9.72	9.88
Statistically Similar Sets of Measurements?	No	

[1] The Period of Record is 1981-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

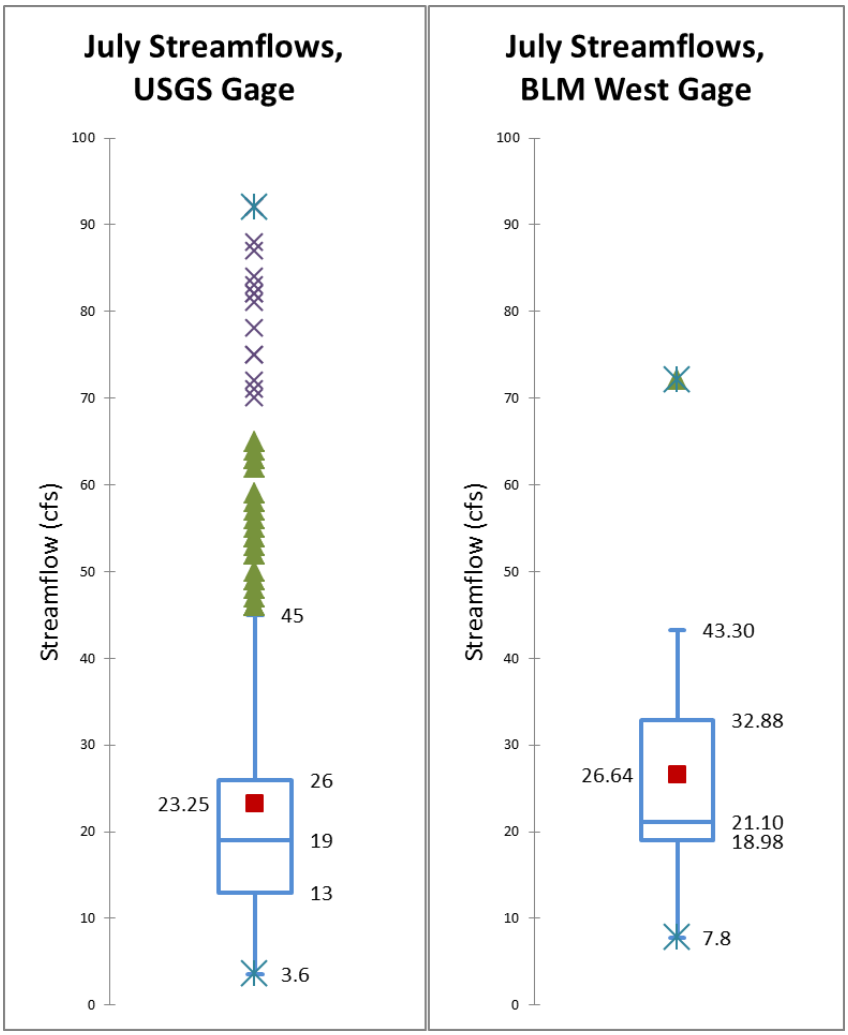
Figure 3-36: Monthly Streamflow at BLM West Gage & USGS Gage: June

February 2014
ACWA Report

July Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	417	20
Minimum (cfs)	3.6	7.8
25th Percentile (cfs)	13	18.98
Median (cfs)	19	21.1
75th Percentile (cfs)	26	32.88
Maximum (cfs)	92	72.1
IQR [2] (cfs)	13	13.9
Median Absolute Deviation (cfs)	6	7.1
Mean (cfs)	23.25	26.64
Standard Deviation (cfs)	16.38	14.79
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1981-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



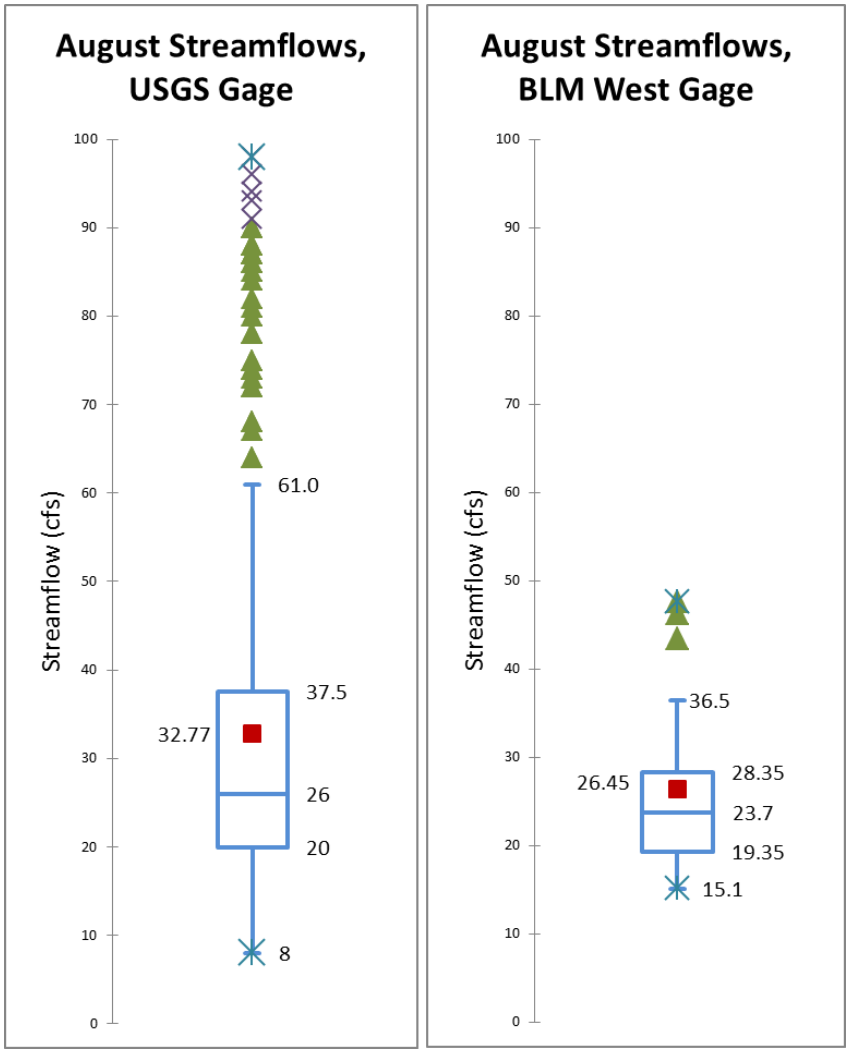
✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

Figure 3-37: Monthly Streamflow at BLM West Gage & USGS Gage: July

August Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	379	20
Minimum (cfs)	8	15.1
25th Percentile (cfs)	20	19.35
Median (cfs)	26	23.7
75th Percentile (cfs)	37.5	28.35
Maximum (cfs)	98	47.6
IQR [2] (cfs)	17.5	9
Median Absolute Deviation (cfs)	7	4.9
Mean (cfs)	32.77	26.45
Standard Deviation (cfs)	19.23	10.05
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1982-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

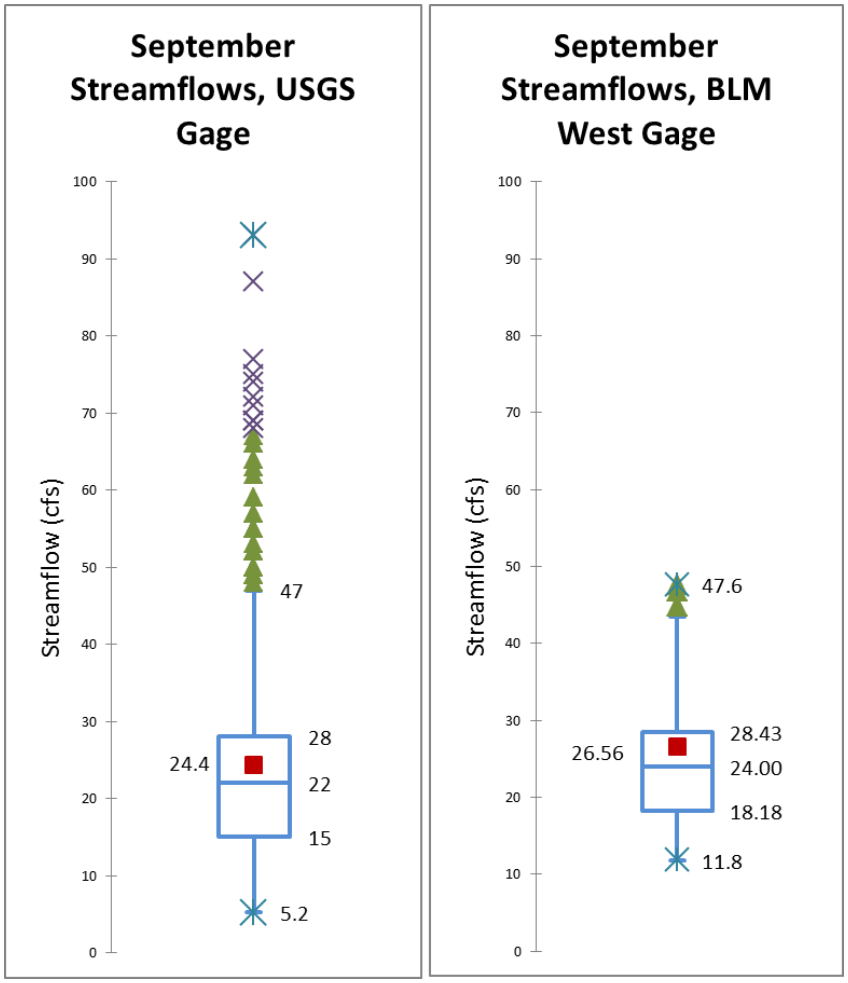
Figure 3-38: Monthly Streamflow at BLM West Gage & USGS Gage: August

February 2014
ACWA Report

September Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	412	22
Minimum (cfs)	5.2	11.8
25th Percentile (cfs)	15	18.18
Median (cfs)	22	24
75th Percentile (cfs)	28	28.43
Maximum (cfs)	93	47.6
IQR [2] (cfs)	13	10.25
Median Absolute Deviation (cfs)	7	5.4
Mean (cfs)	24.4	26.56
Standard Deviation (cfs)	14.65	10.50
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1981-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



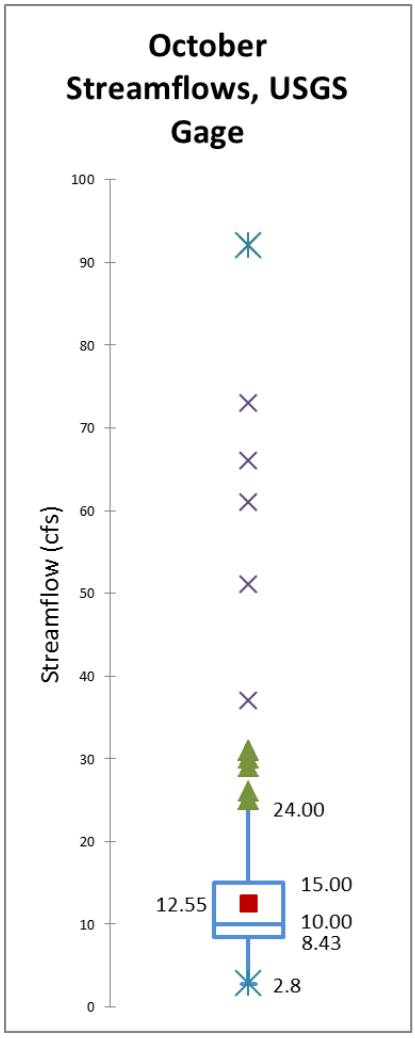
✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

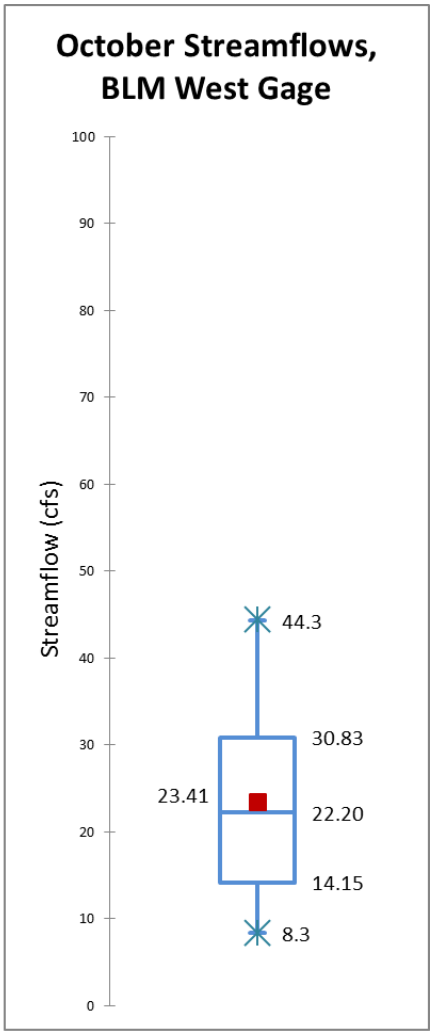
Figure 3-39: Monthly Streamflow at BLM West Gage & USGS Gage: September

October Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	575	24
Minimum (cfs)	2.8	8.3
25th Percentile (cfs)	8.43	14.15
Median (cfs)	10	22.2
75th Percentile (cfs)	15	30.83
Maximum (cfs)	92	44.3
IQR [2] (cfs)	6.58	16.68
Median Absolute Deviation (cfs)	2.7	8.5
Mean (cfs)	12.55	23.41
Standard Deviation (cfs)	7.91	10.83
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1981-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile





✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

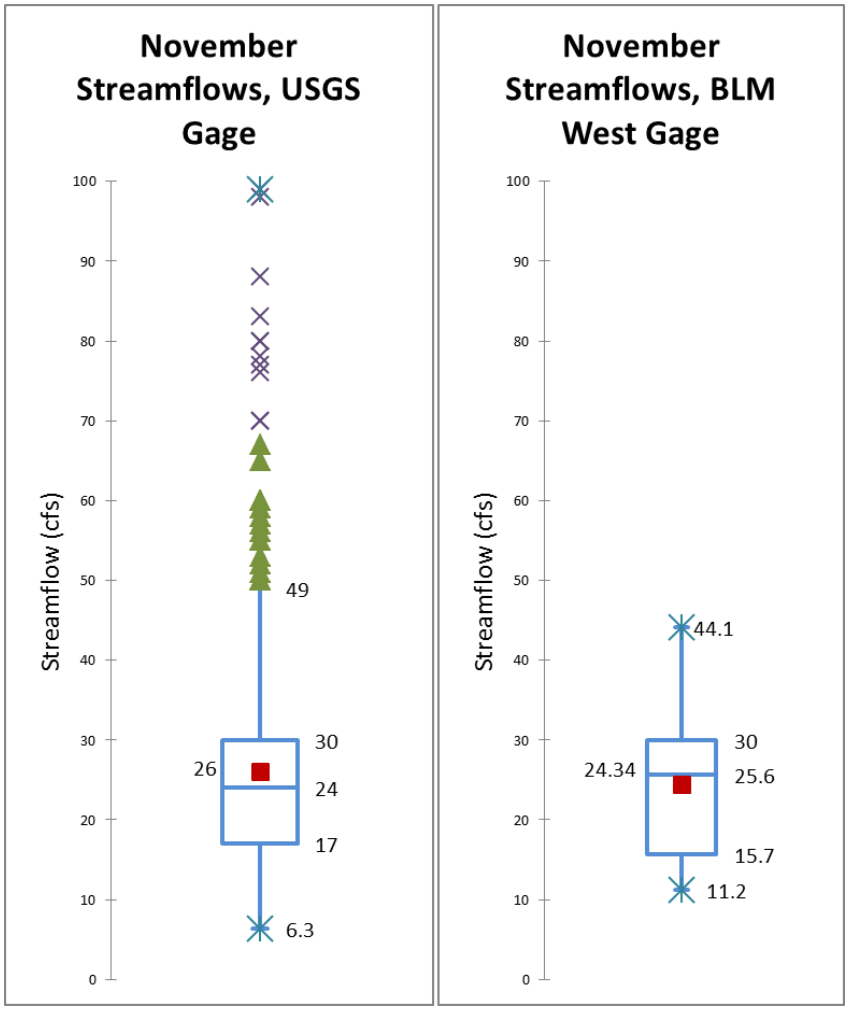
Figure 3-40: Monthly Streamflow at BLM West Gage & USGS Gage: October

February 2014
ACWA Report

November Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	442	17
Minimum (cfs)	6.3	11.2
25th Percentile (cfs)	17	15.7
Median (cfs)	24	25.6
75th Percentile (cfs)	30	30
Maximum (cfs)	99	44.1
IQR [2] (cfs)	13	14.3
Median Absolute Deviation (cfs)	6	7.7
Mean (cfs)	26	24.34
Standard Deviation (cfs)	13.89	8.98
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1982-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



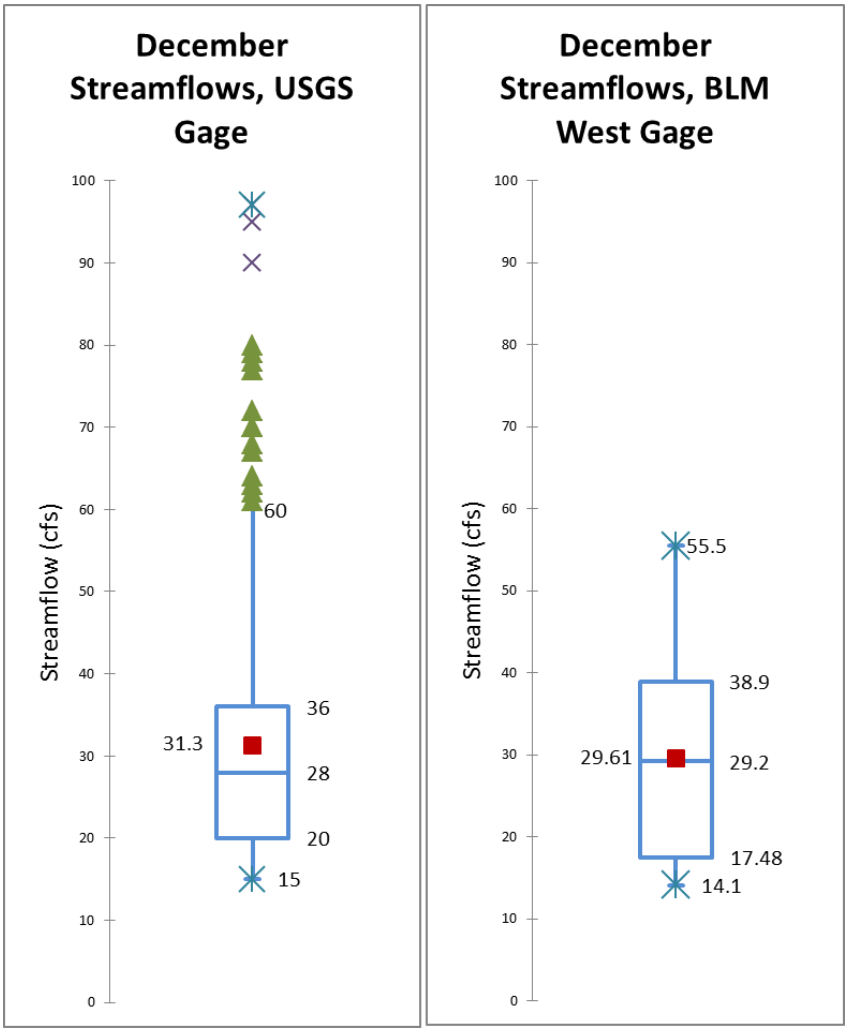
✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

Figure 3-41: Monthly Streamflow at BLM West Gage & USGS Gage: November

December Streamflow: USGS Gage & BLM West Gage		
Period of Record [1]	**USGS Gage**	**West Gage**
N (Number of measurements less than 100 cfs)	319	18
Minimum (cfs)	15	14.1
25th Percentile (cfs)	20	17.48
Median (cfs)	28	29.2
75th Percentile (cfs)	36	38.9
Maximum (cfs)	97	55.5
IQR [2] (cfs)	16	21.43
Median Absolute Deviation (cfs)	8	11.05
Mean (cfs)	31.3	29.61
Standard Deviation (cfs)	14.23	12.48
Statistically Similar Sets of Measurements?	Yes	

[1] The Period of Record is 1980-1994.

[2] Interquartile Range (IQR) equals the 75th percentile minus the 25th percentile



✳	■	▲	×
Minimum & Maximum	Mean	Range 1.5-3*IQR	Range >3*IQR

Figure 3-42: Monthly Streamflow at BLM West Gage & USGS Gage: December

February 2014
ACWA Report

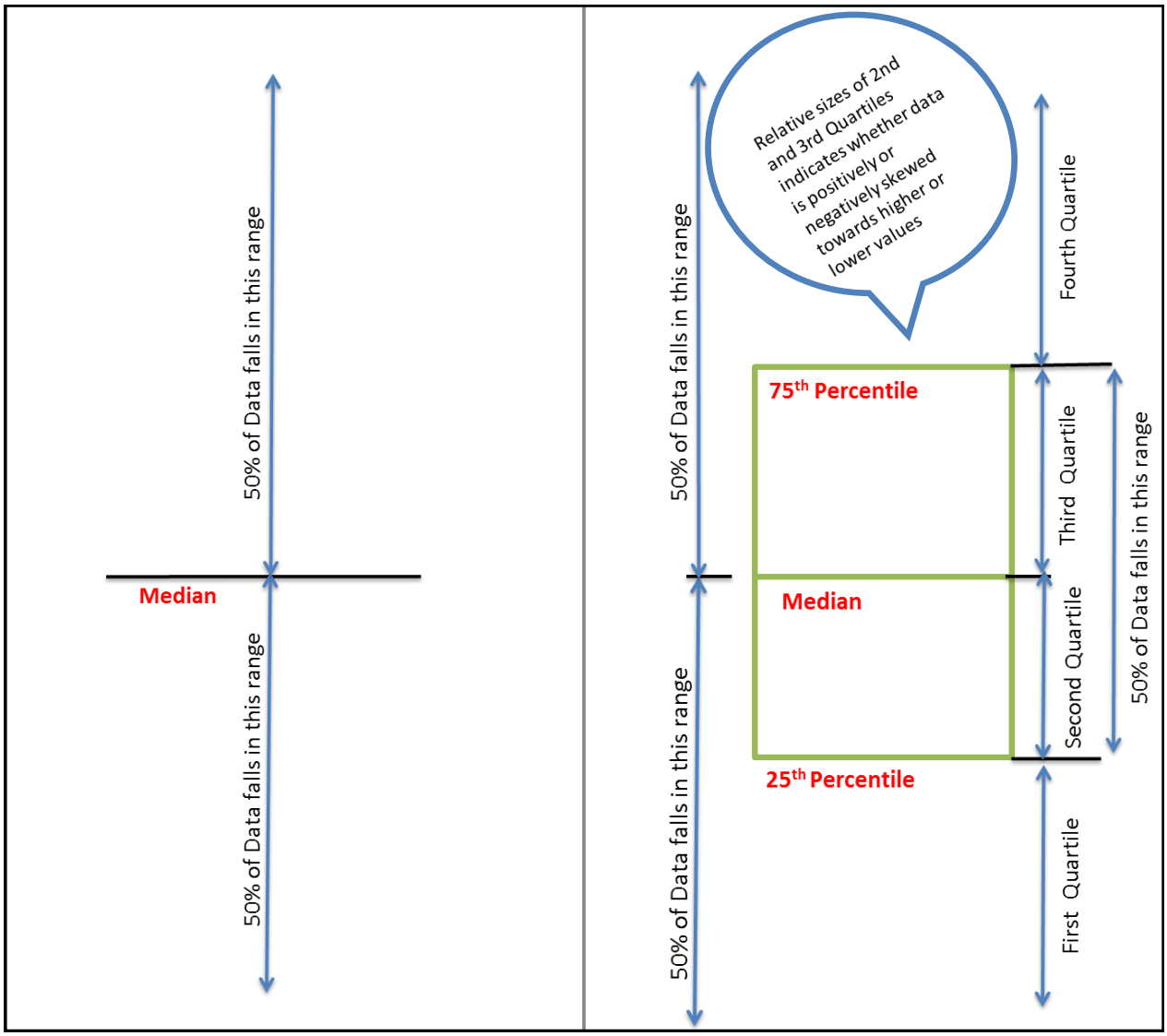


Figure 3-43: Improved Quantification by use of 25th & 75th Percentiles

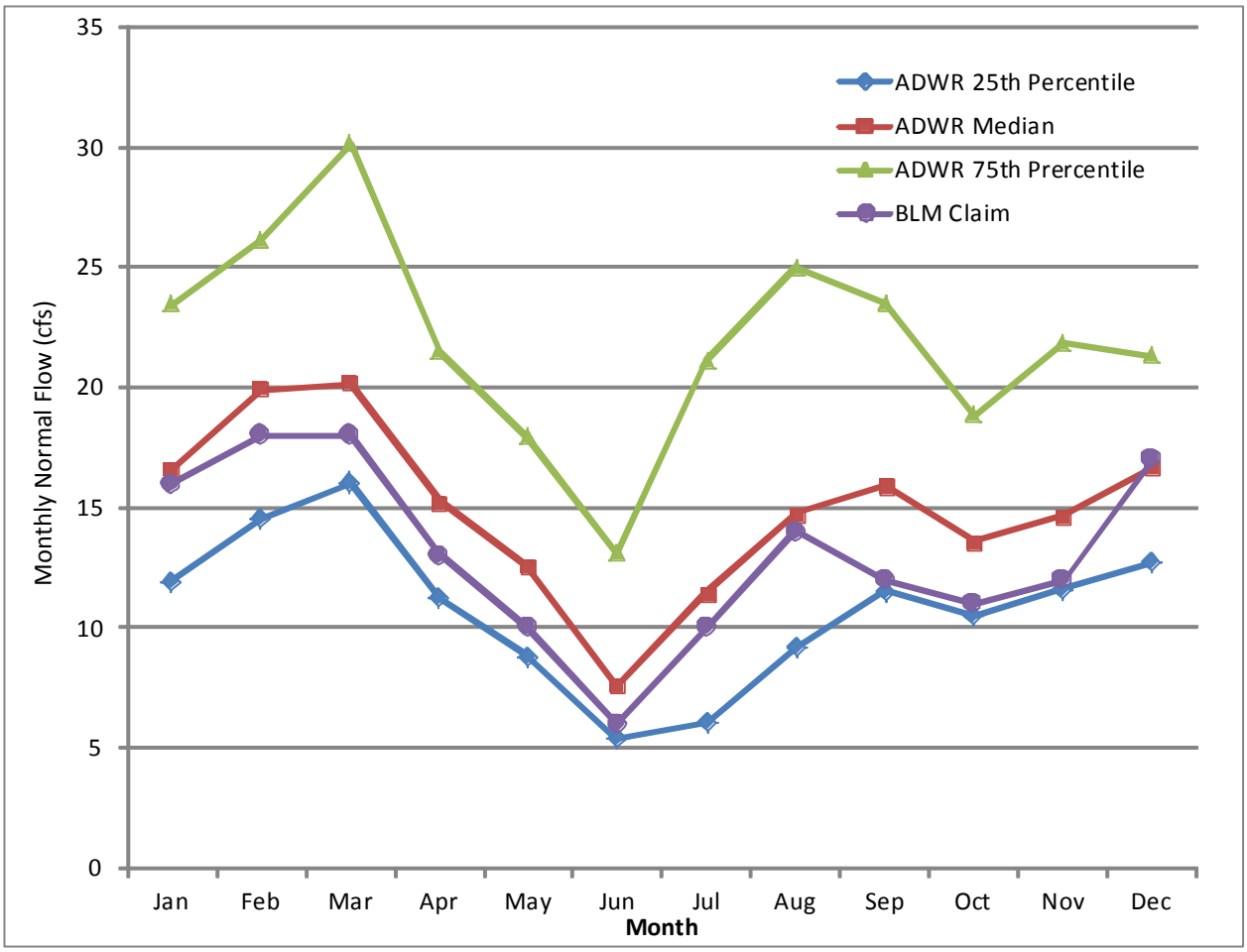


Figure 3-44: Comparison of Quantification Results for Monthly Flows of Natural Flow Regime

February 2014
ACWA Report

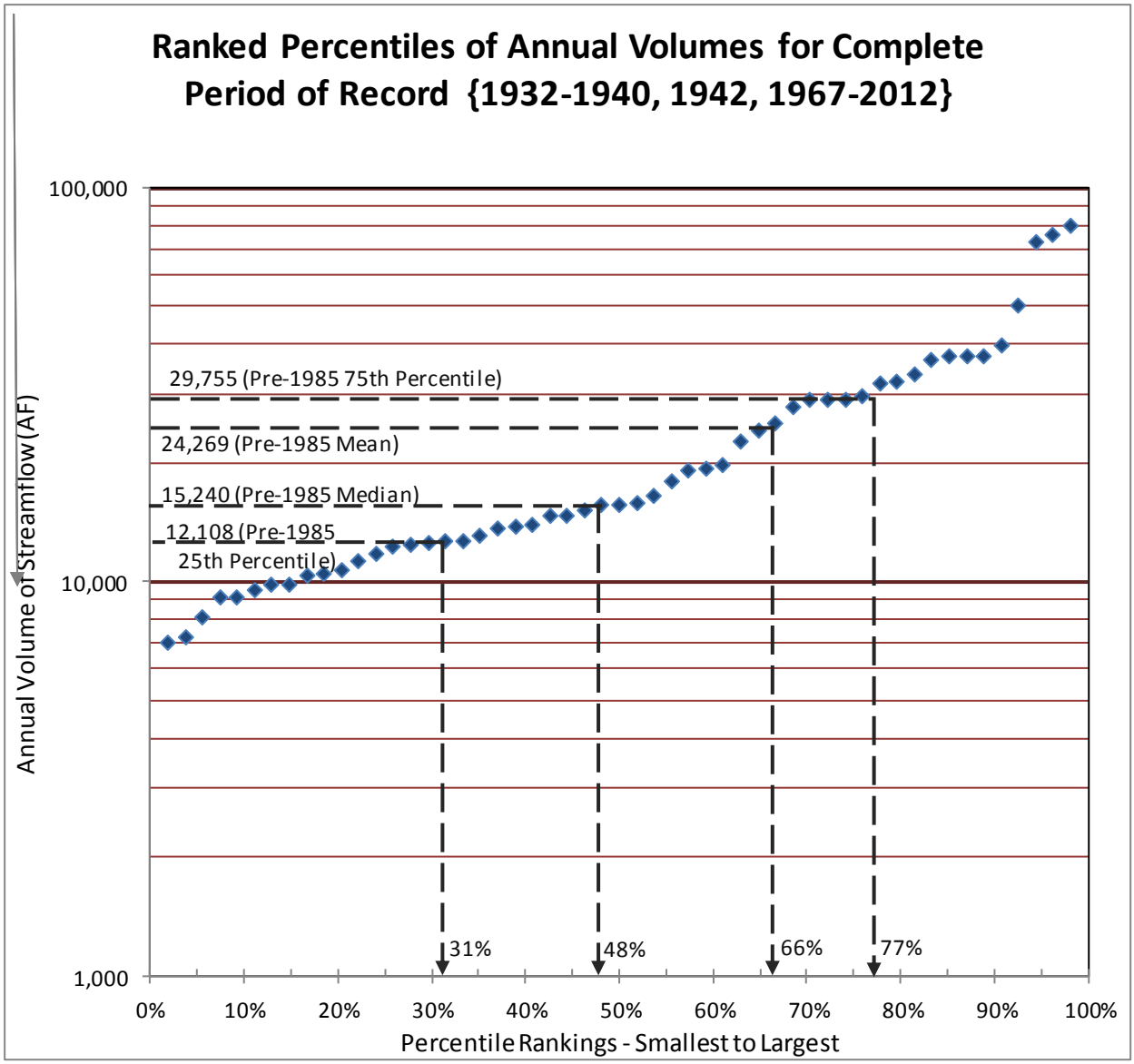


Figure 3-45: Comparison of Flow BLM West Gage & USGS Gage

February 2014
ACWA Report

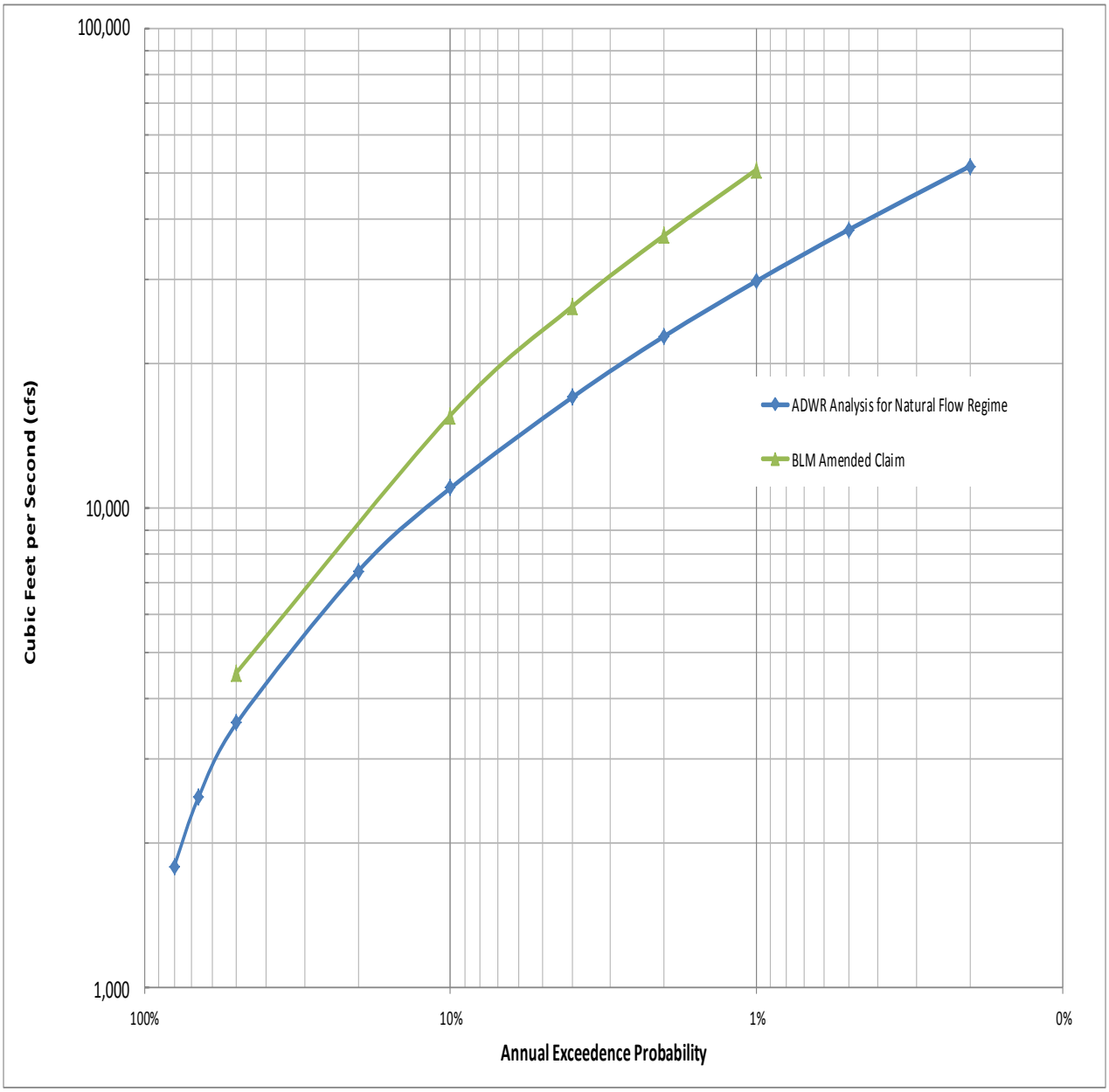
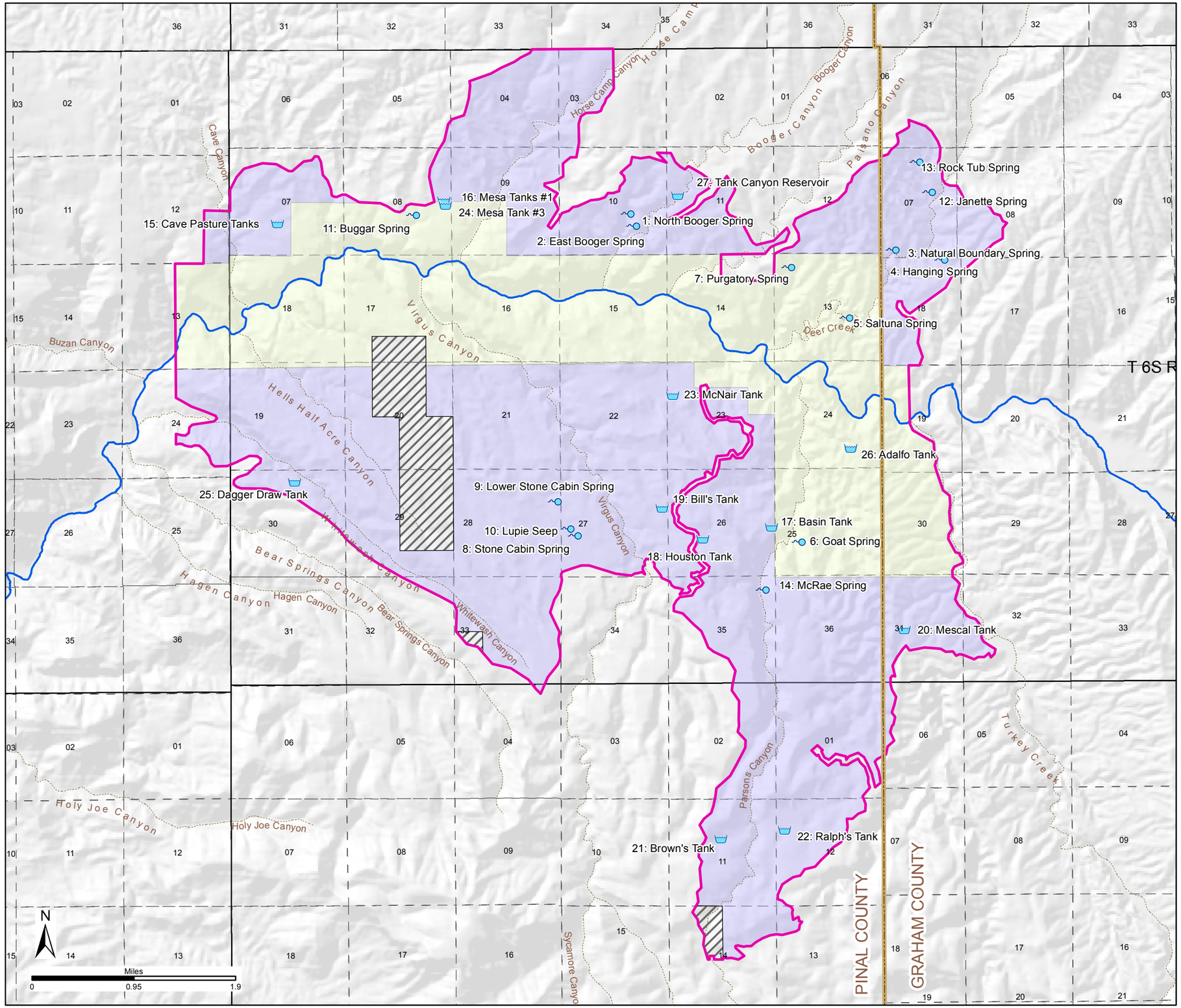


Figure 3-46: Comparison of Quantification Results for Flood Frequencies of Natural Flow Regime

February 2014
ACWA Report



Legend

- Springs/Seeps
- Impoundments
- Aravaipa Creek
- Tributary Drainages
- ACWA Boundary
- 8/24/1984 Designation
- 11/28/1990 Expansion
- TNC ACWA Inholdings

Figure 3-47
ACWA Point Source Claims
(Attachment C-1)

February 2014 ACWA Report