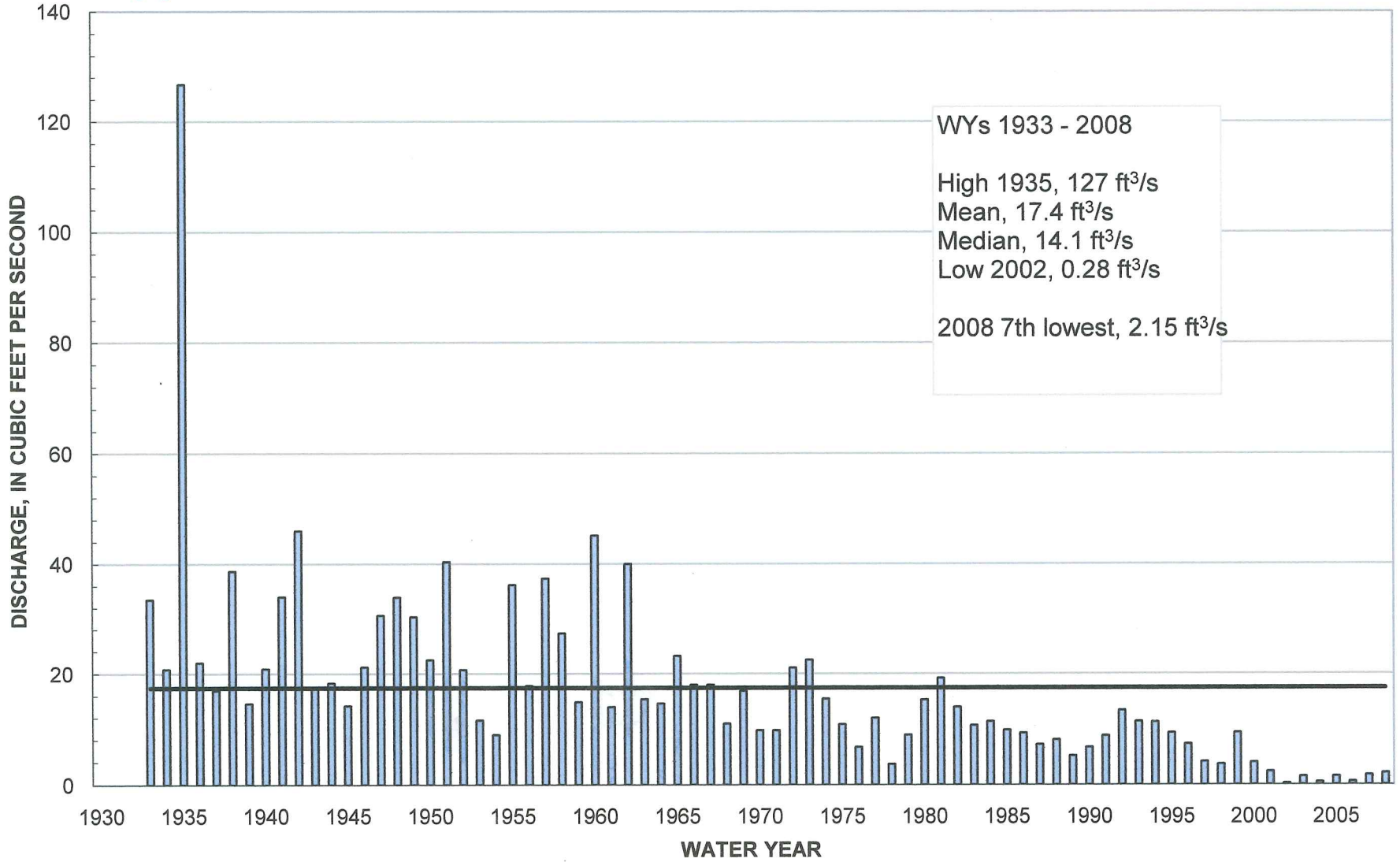




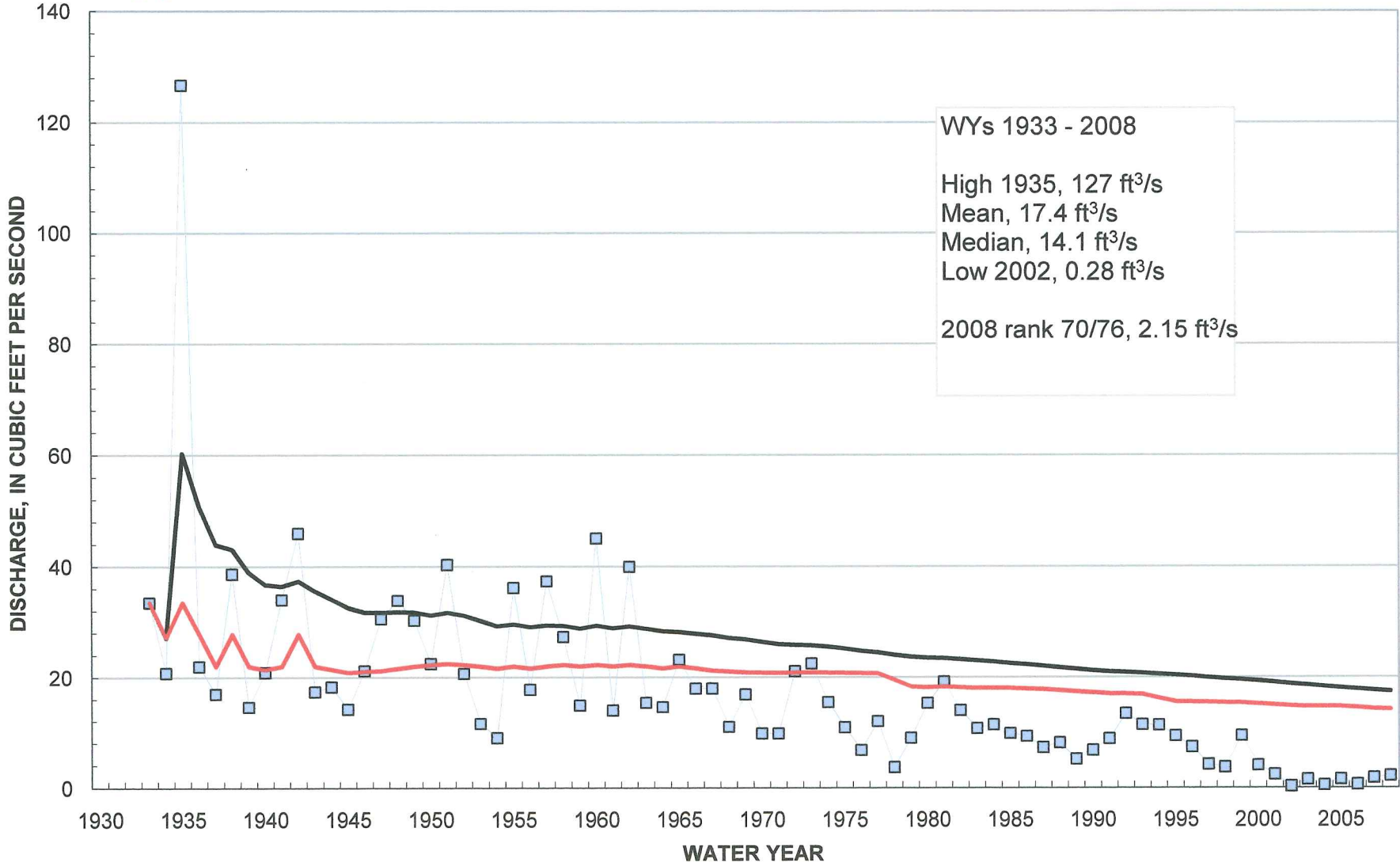
06821500 Arikaree River at Haigler, NE



Annual mean Long-term mean



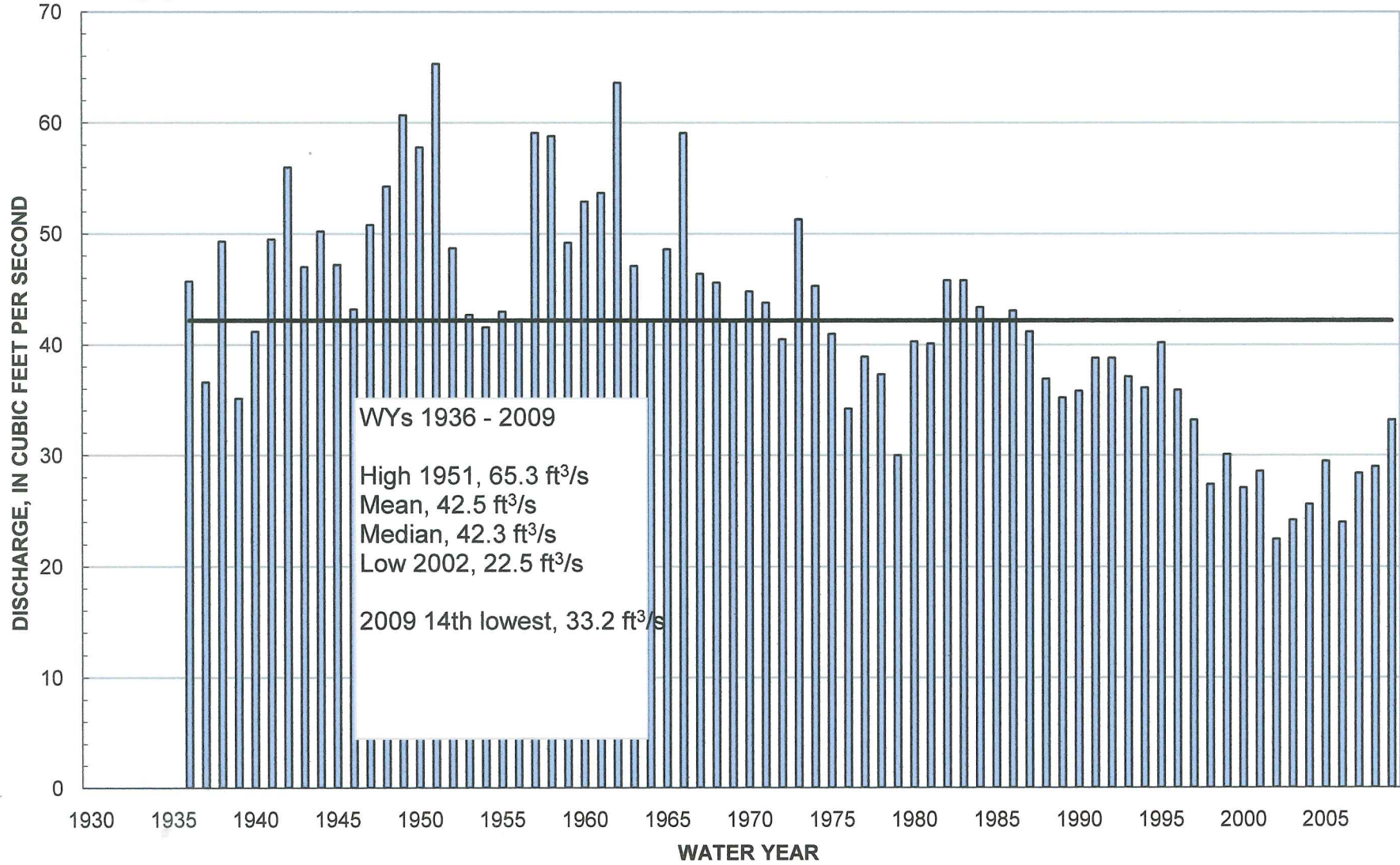
06821500 Arikaree River at Haigler, NE



■ Annual mean — Cumulative mean — Cumulative median



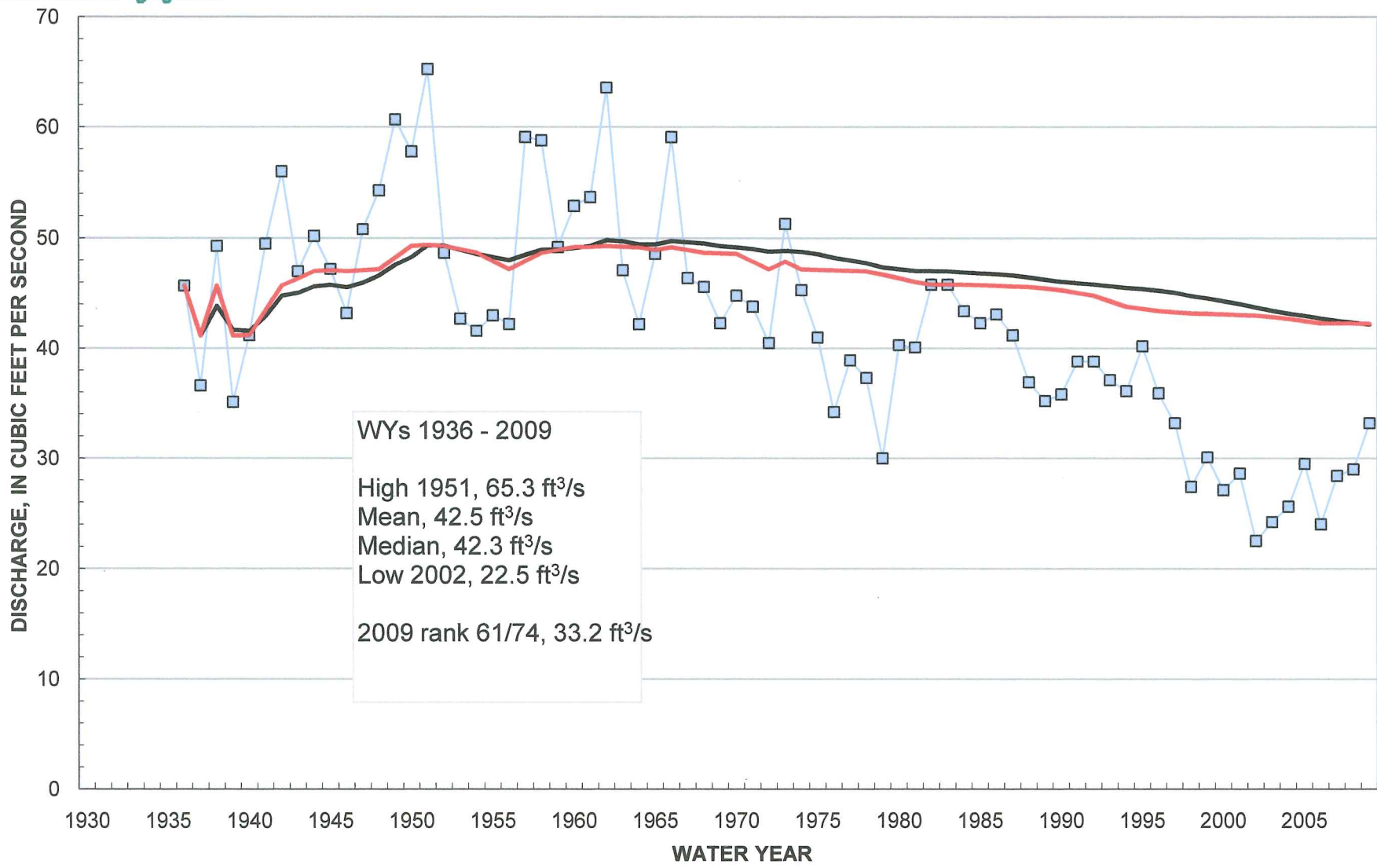
06823000 N Fk Republican River at CO-NE State Line



Annual mean    Long-term mean



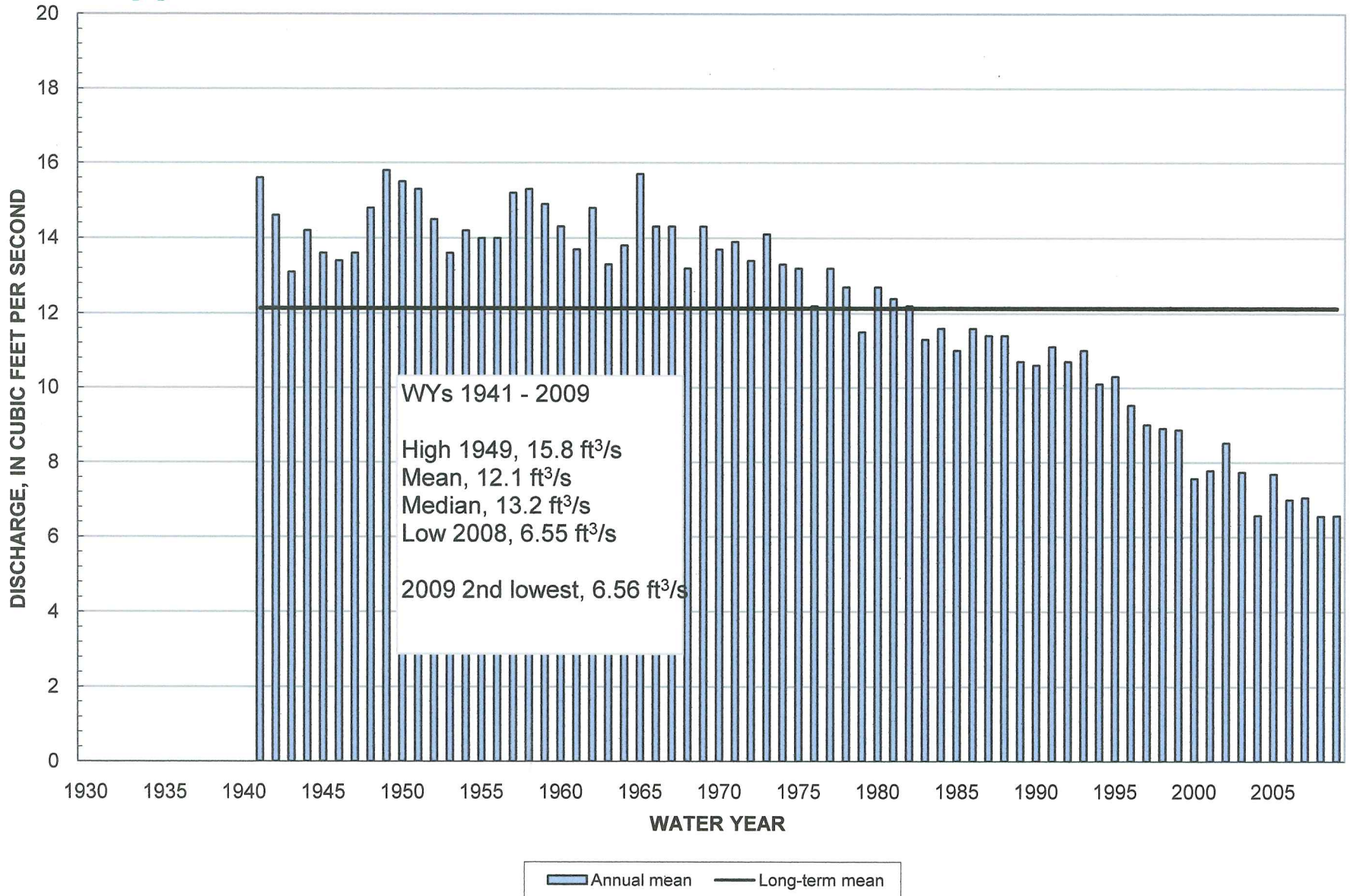
### 06823000 N Fk Republican River at CO-NE State Line



Annual mean Cumulative mean Cumulative median

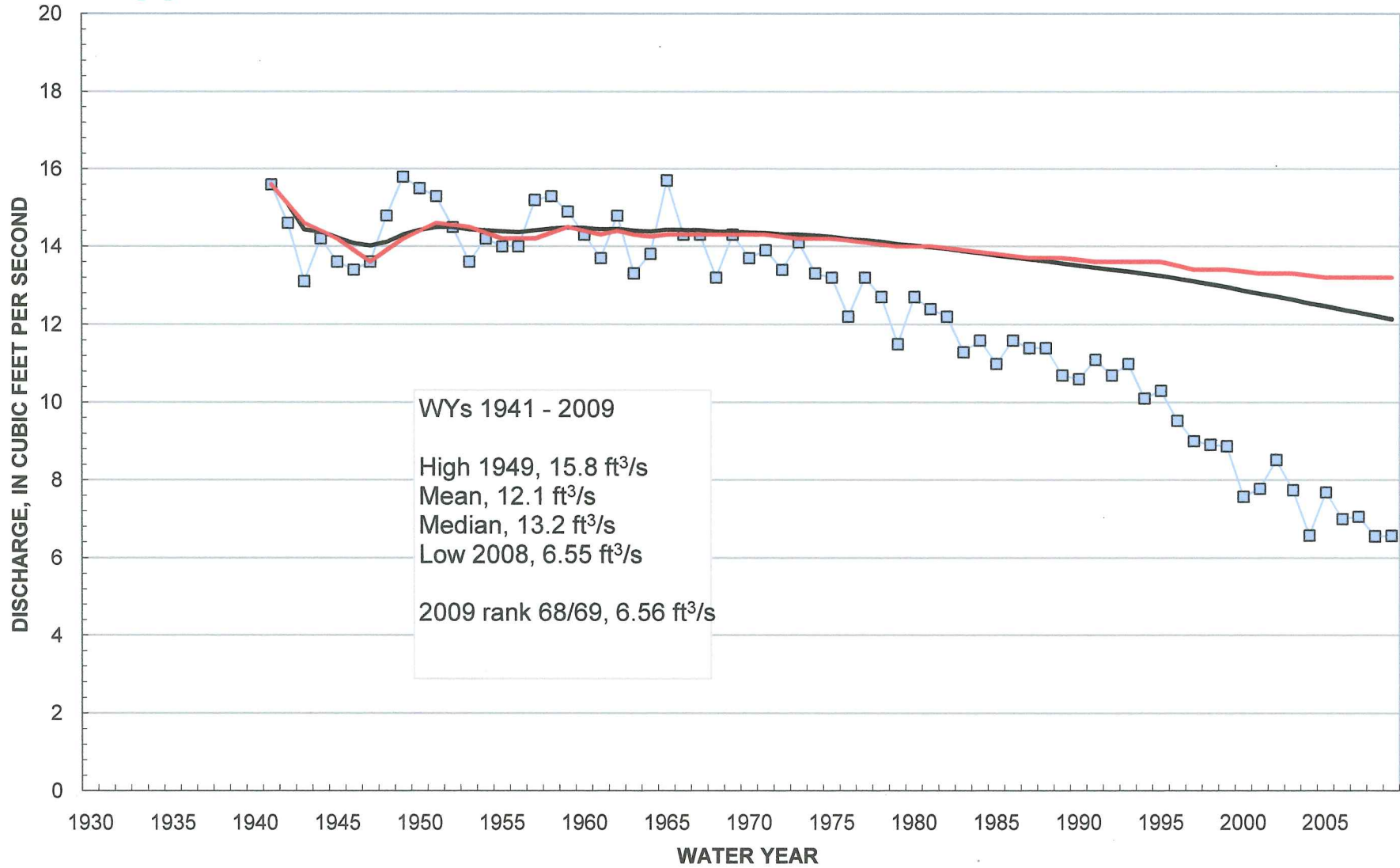


### 06824000 Rock Creek at Parks, NE





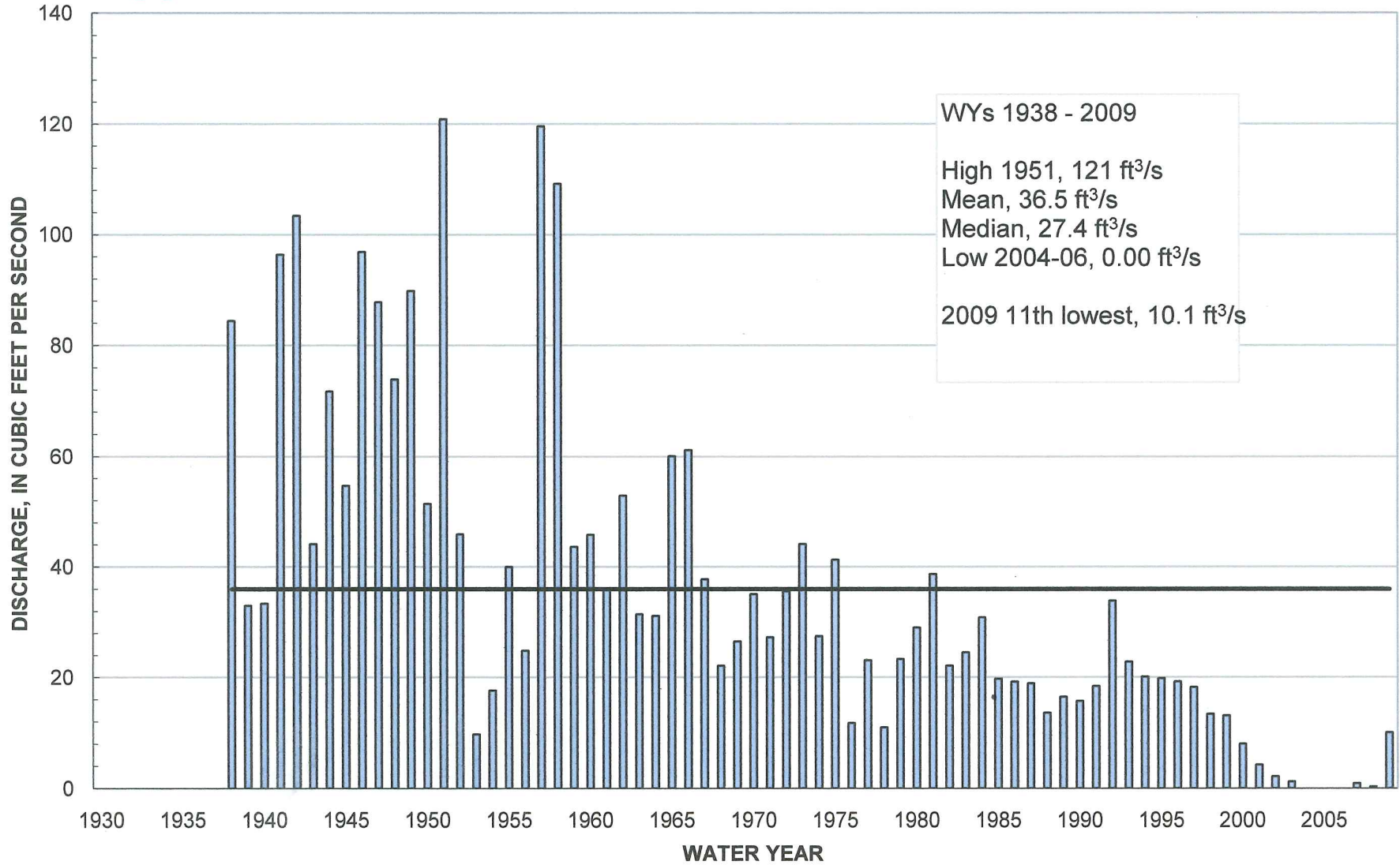
### 06824000 Rock Creek at Parks, NE



Annual mean Cumulative mean Cumulative median

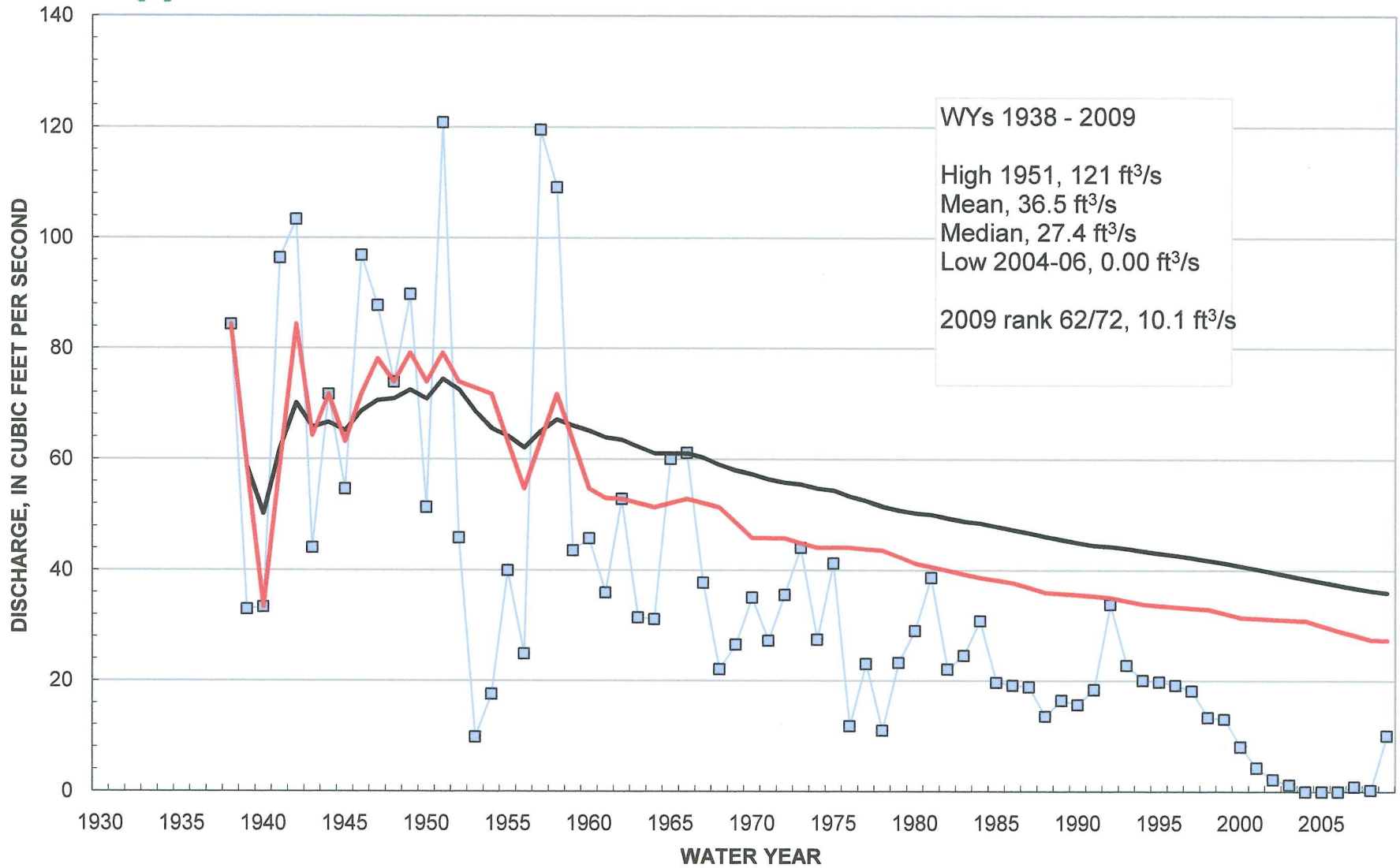


06827500 S Fk Republican River near Benkelman, NE





06827500 S Fk Republican River near Benkelman, NE

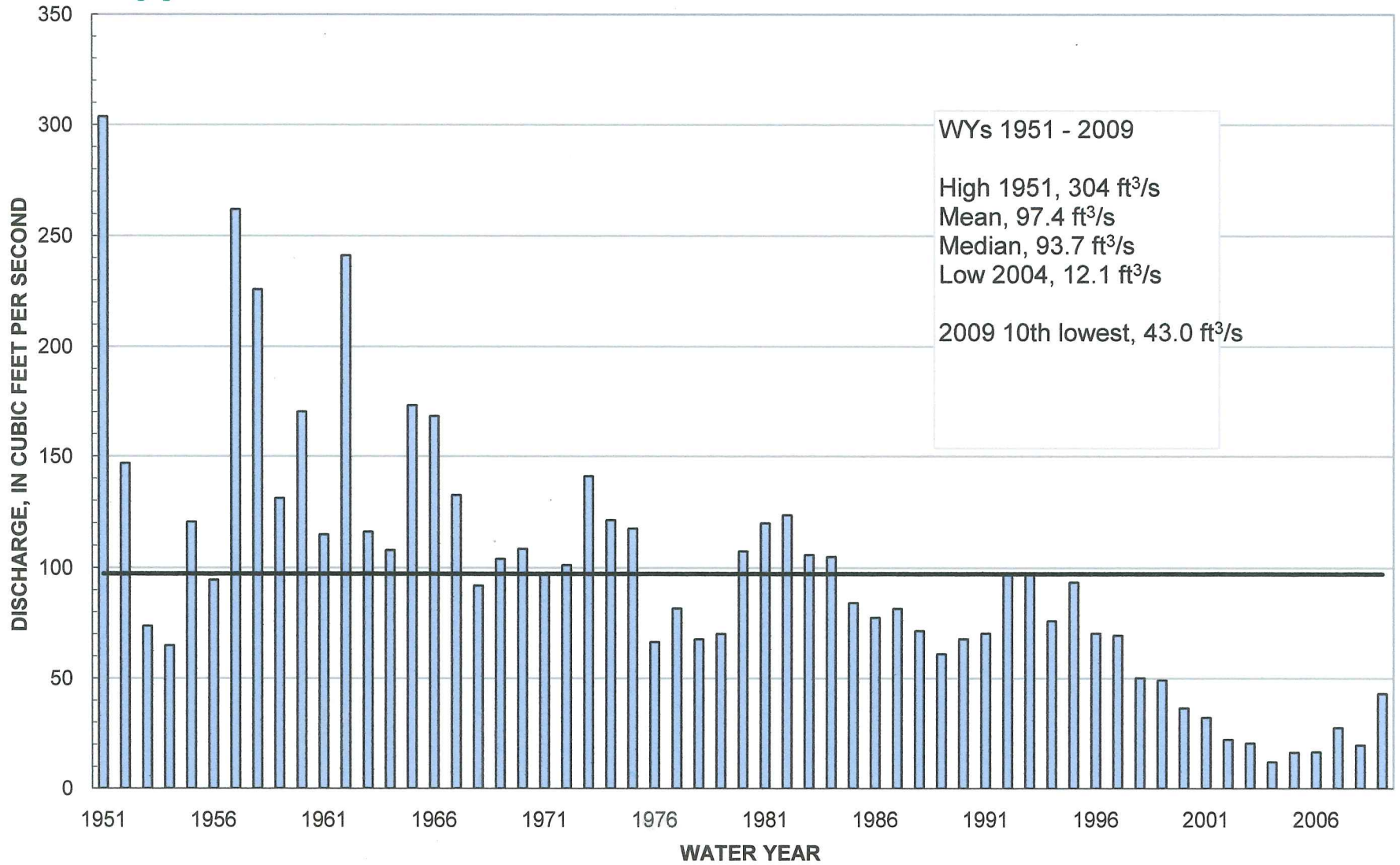


Annual mean Cumulative mean Cumulative median





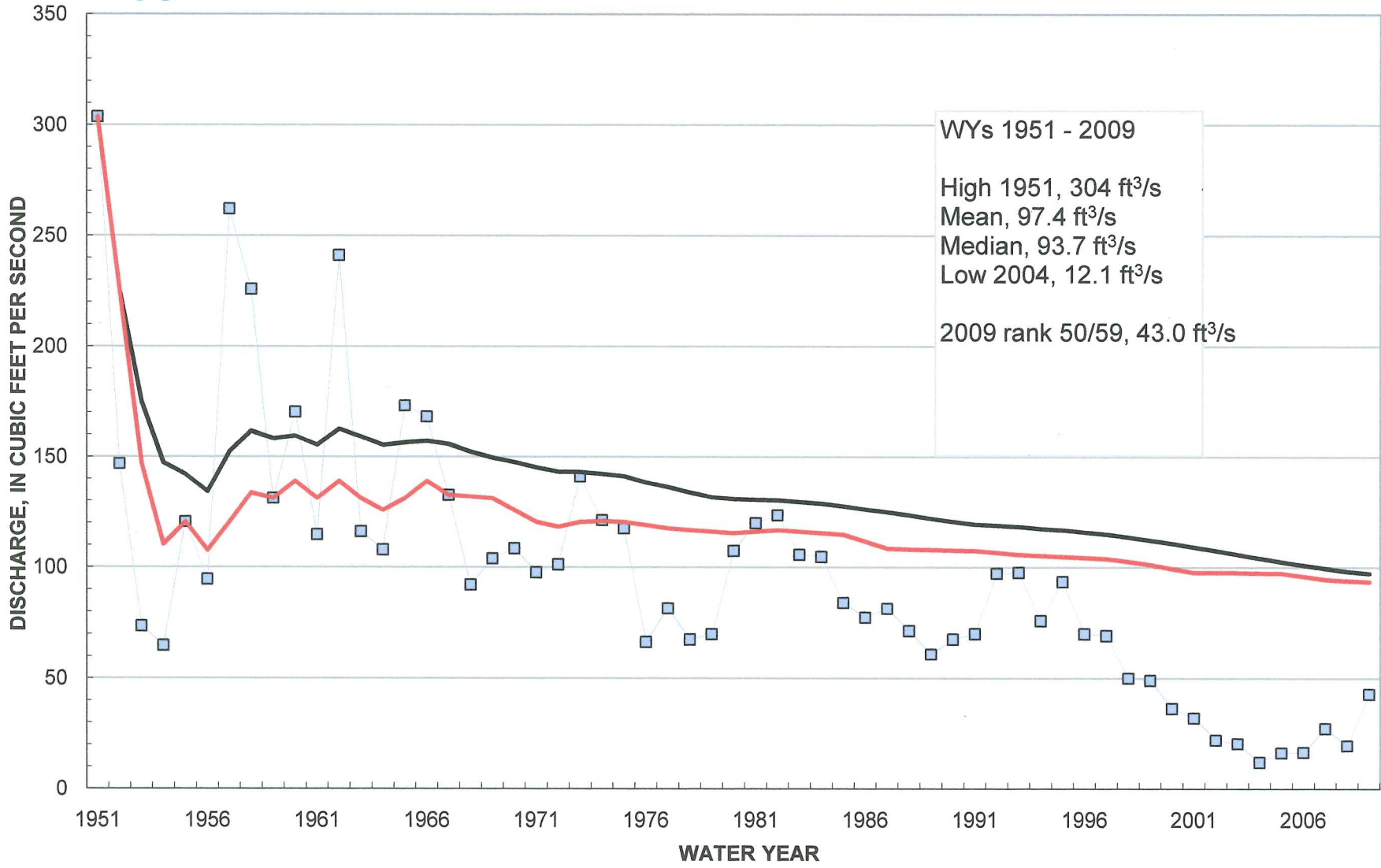
06828500 Republican River at Stratton, NE



Annual mean    Long-term mean



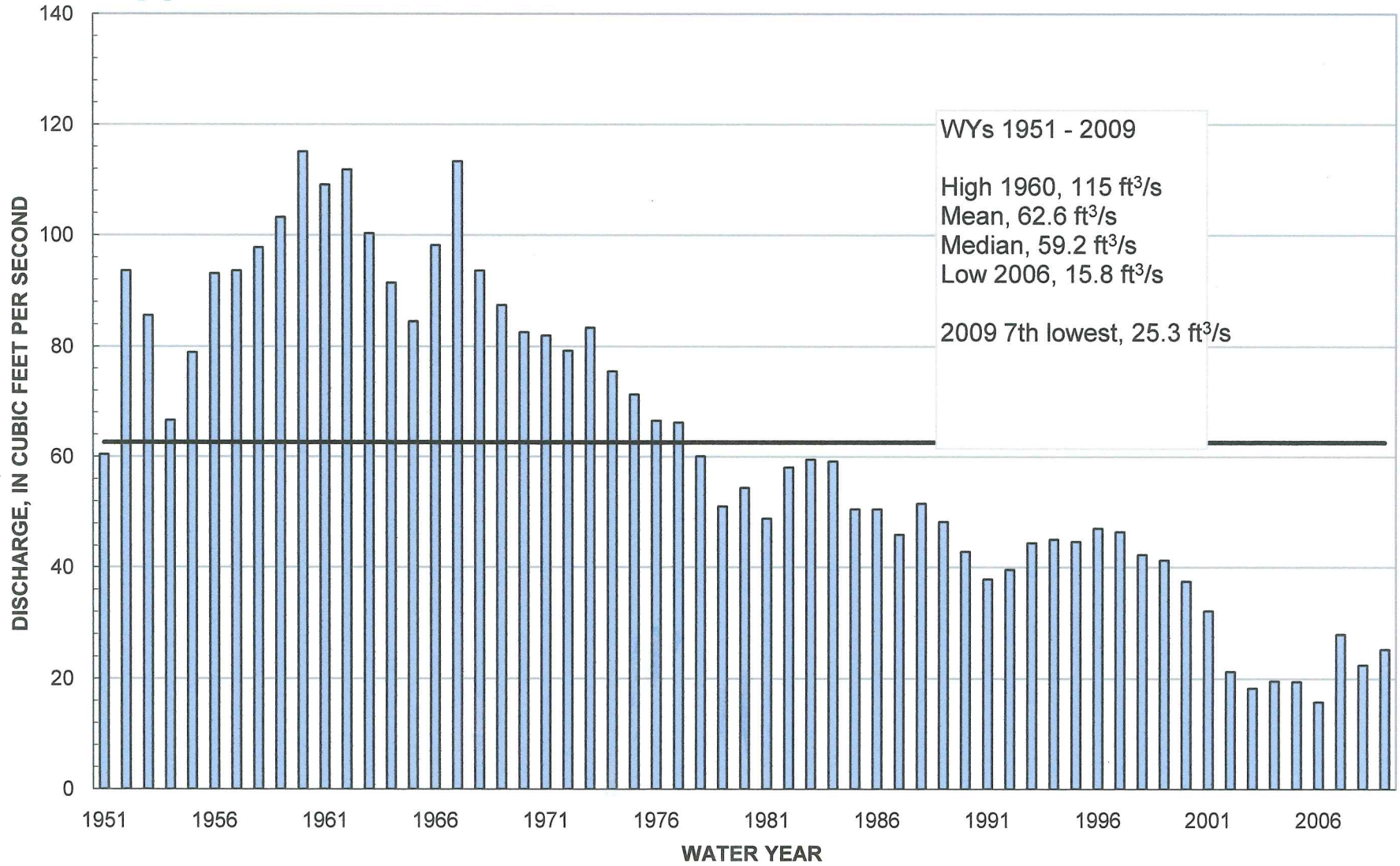
06828500 Republican River at Stratton, NE



■ Annual mean — Cumulative mean — Cumulative median



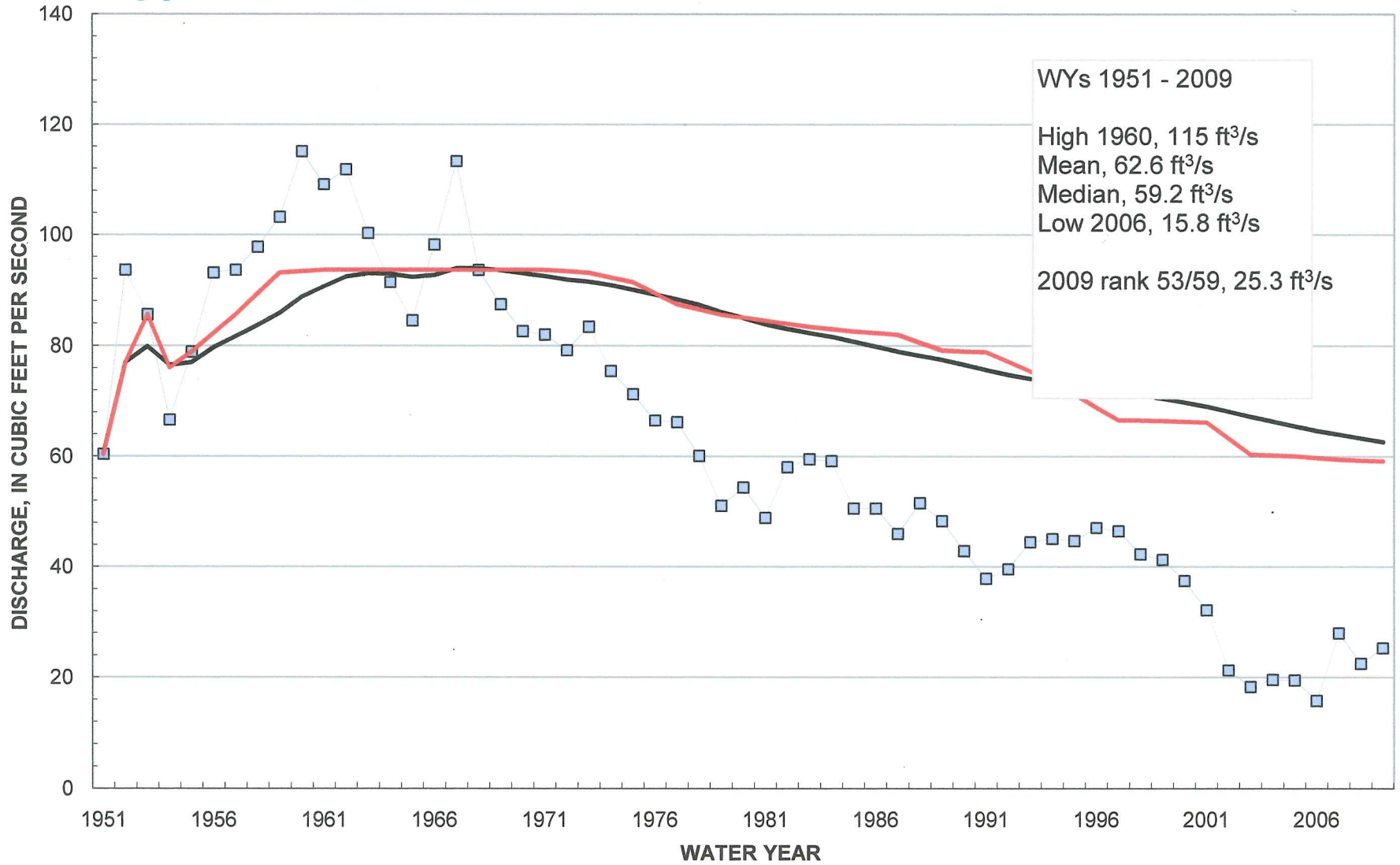
06834000 Frenchman Creek at Palisade, NE



Annual mean — Long-term mean



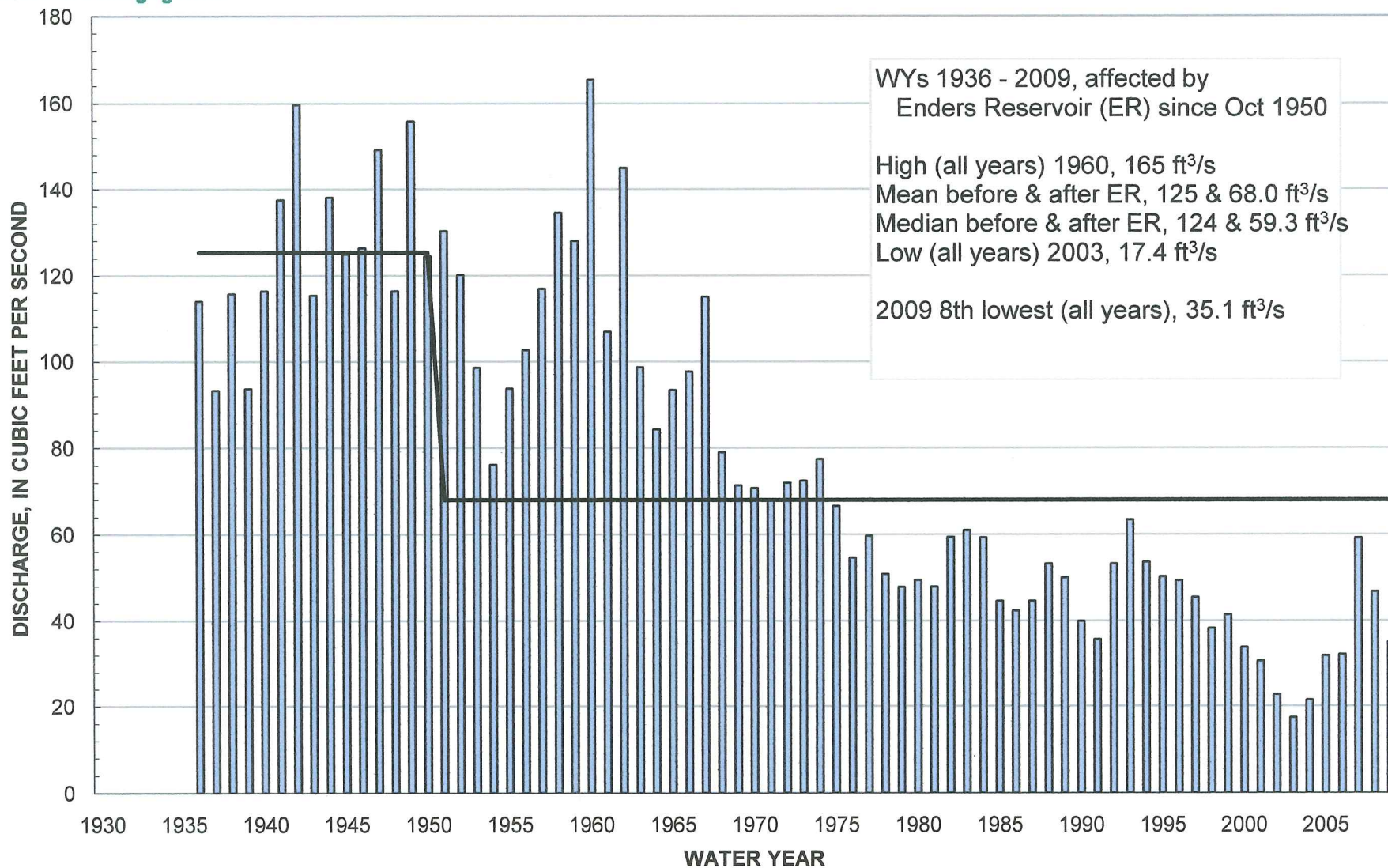
### 06834000 Frenchman Creek at Palisade, NE



■ Annual mean    — Cumulative mean    — Cumulative median

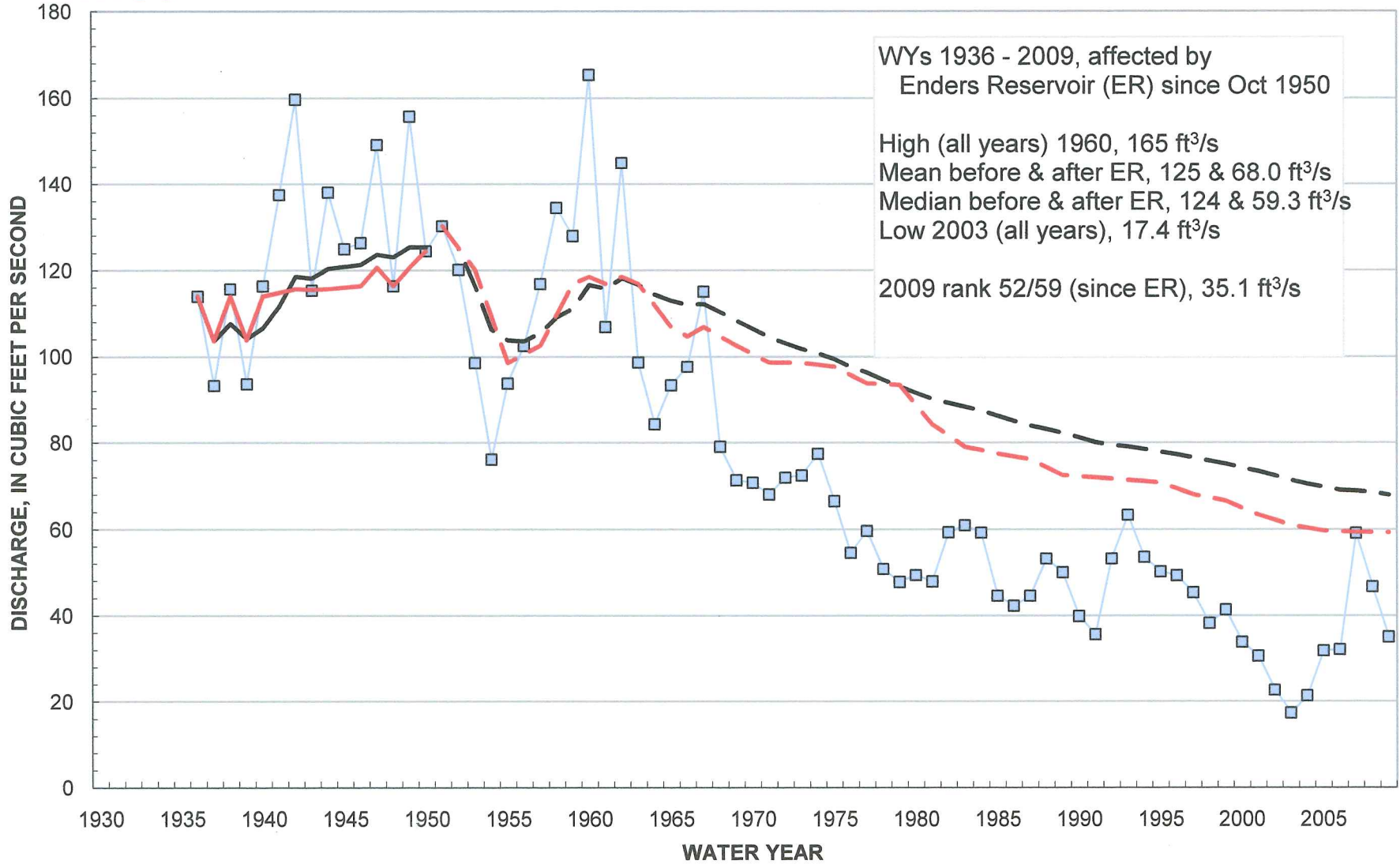


### 06835500 Frenchman Creek at Culbertson, NE



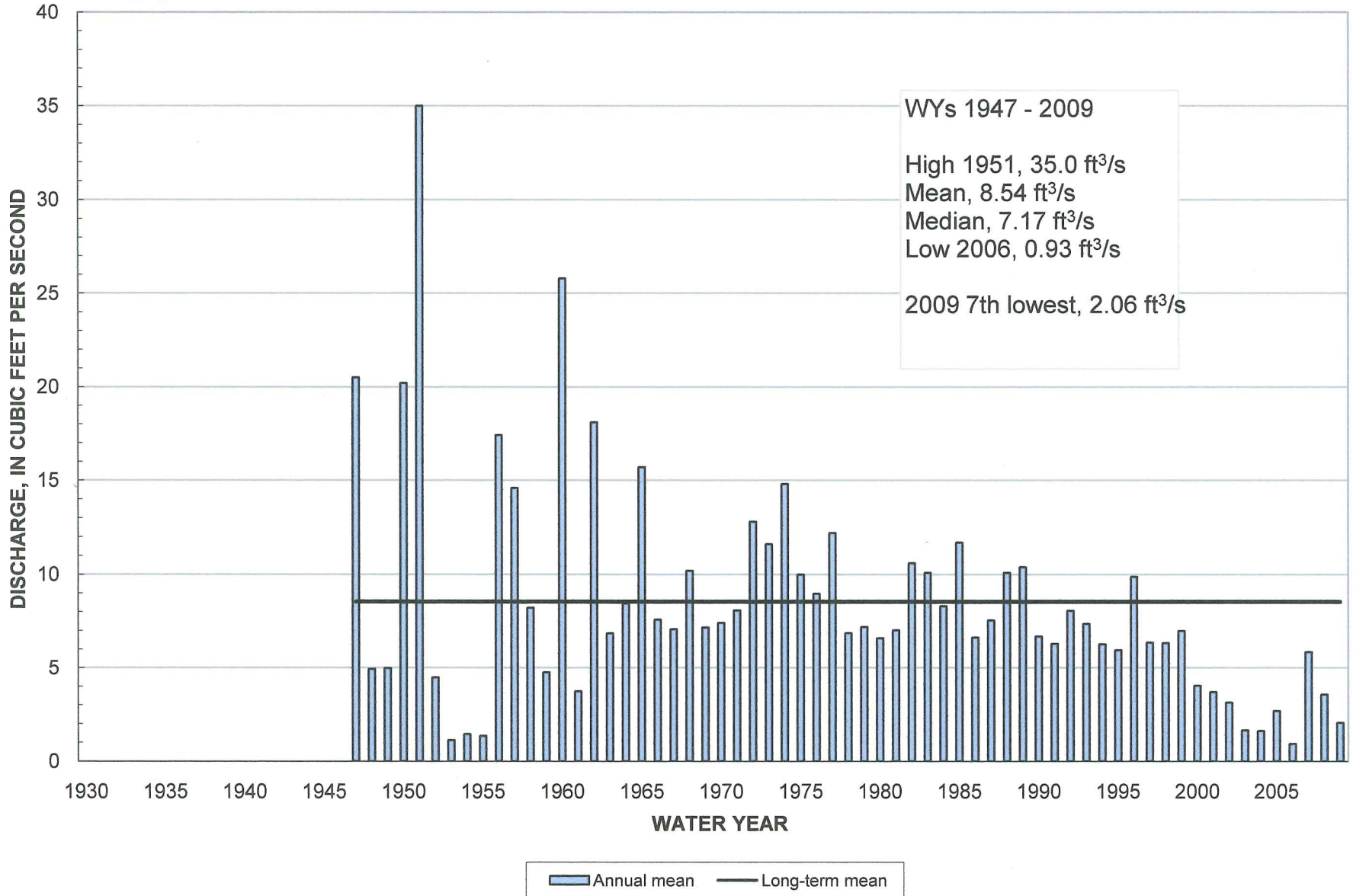


06835500 Frenchman Creek at Culbertson, NE



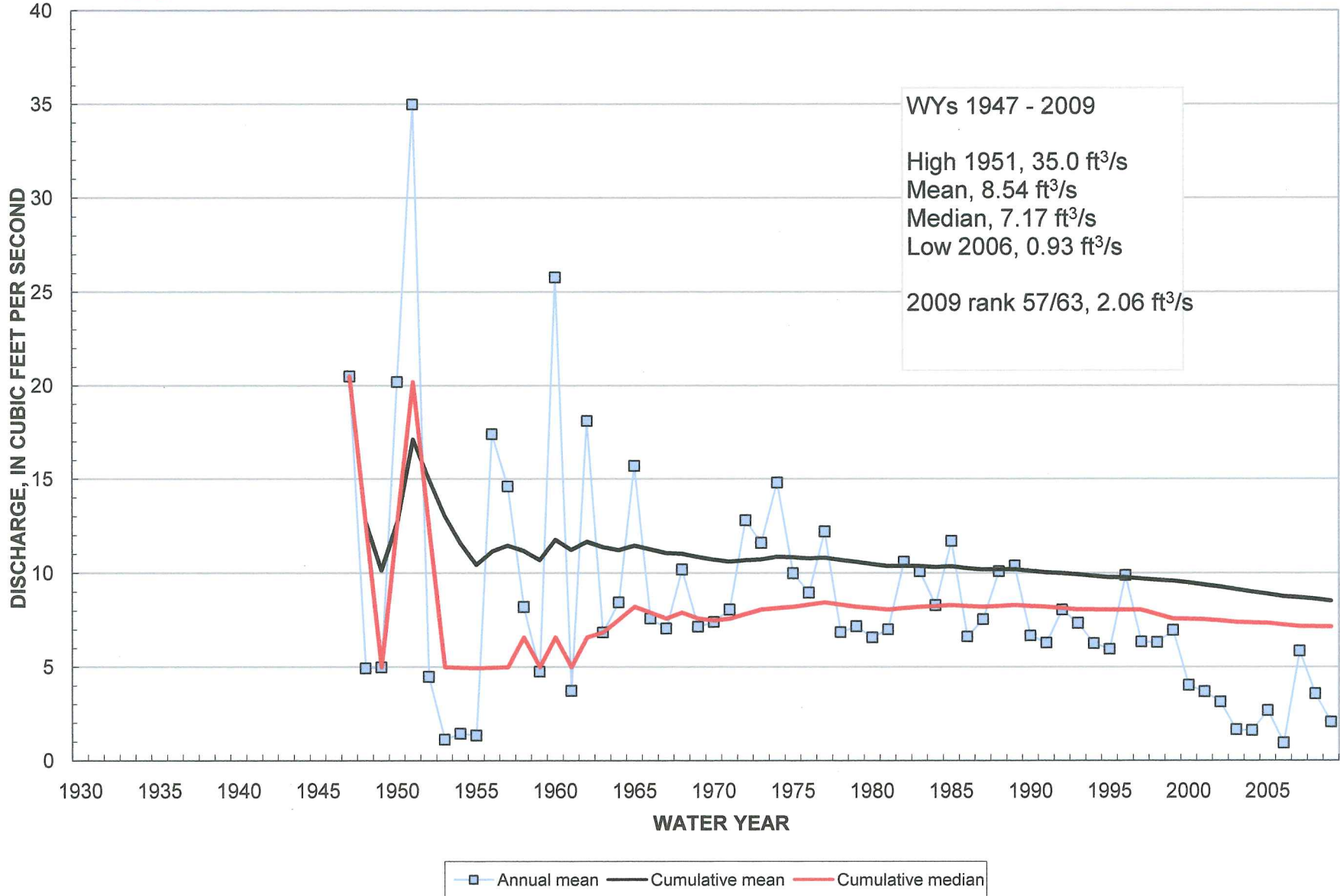


06836500 Driftwood Creek near McCook, NE





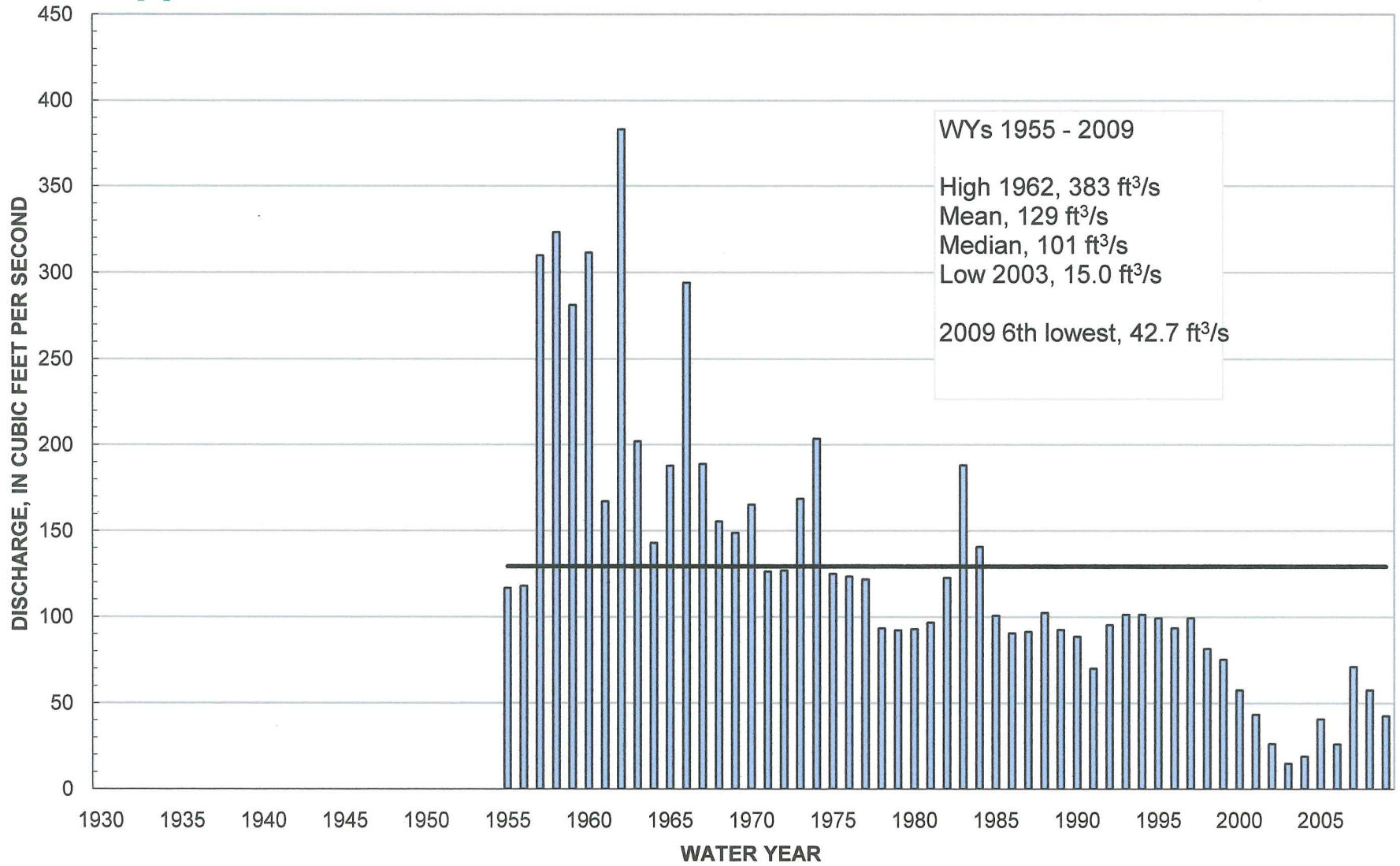
06836500 Driftwood Creek near McCook, NE







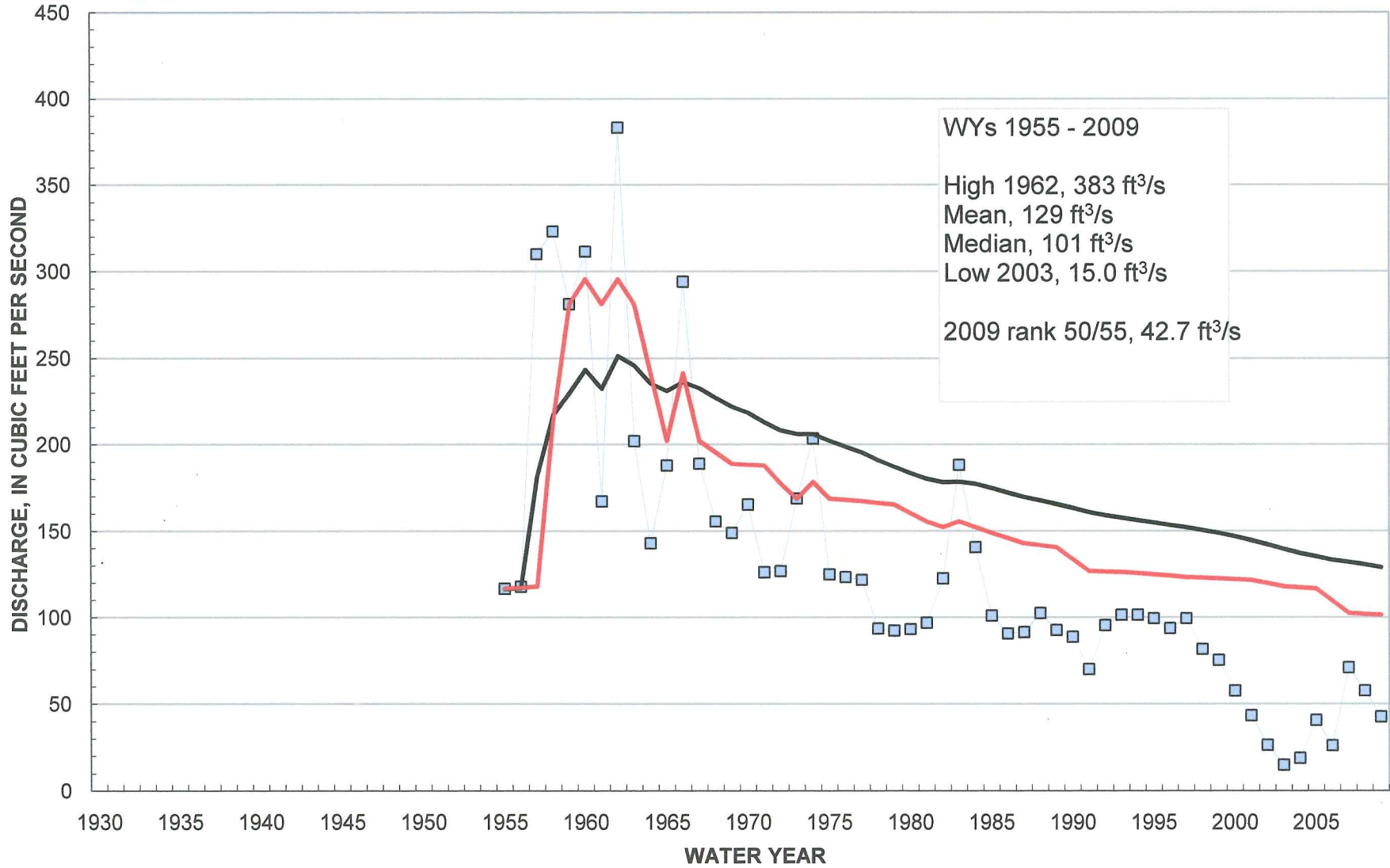
06837000 Republican River at McCook, NE



Annual mean      Long-term mean



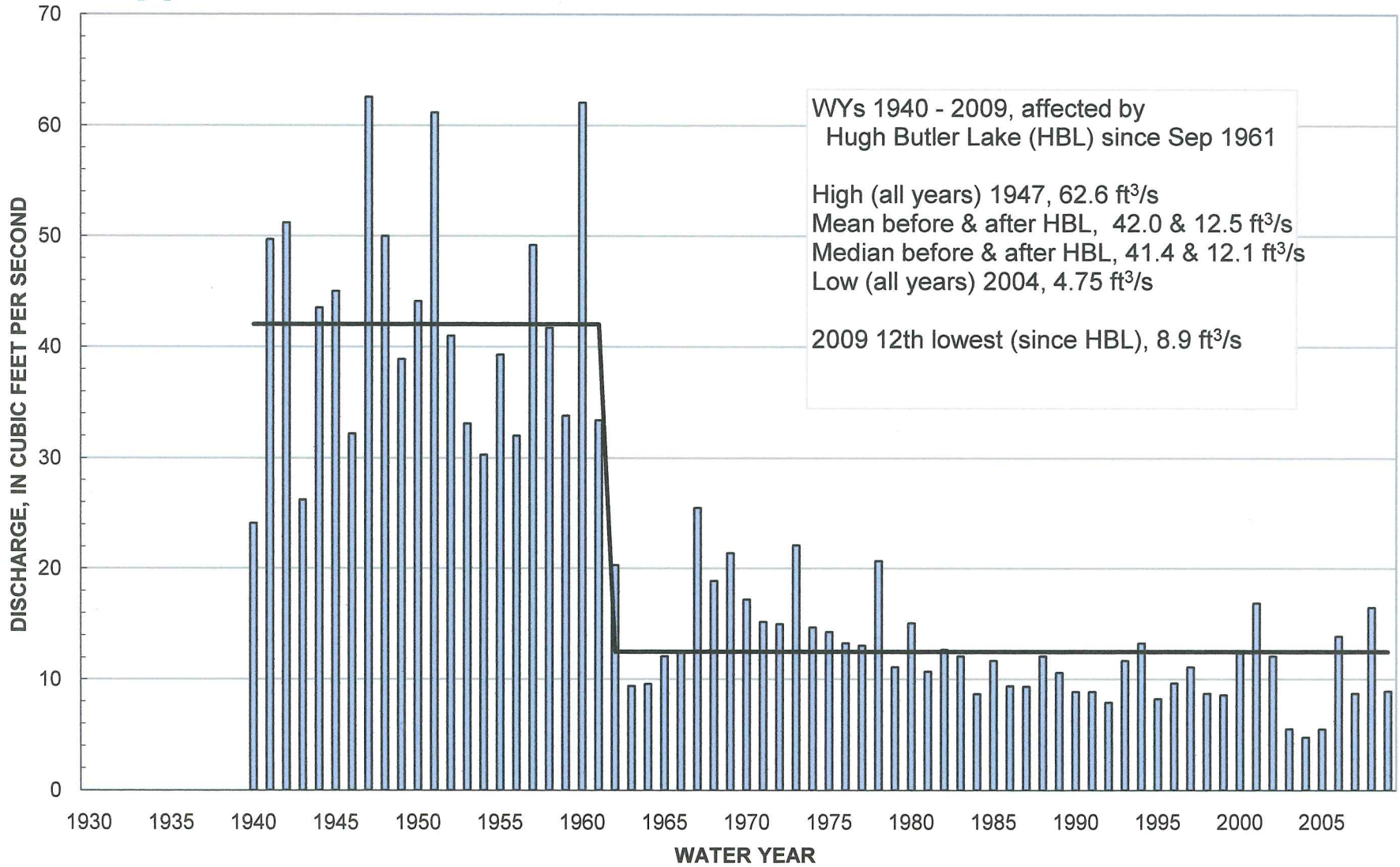
06837000 Republican River at McCook, NE



■ Annual mean — Cumulative mean — Cumulative median

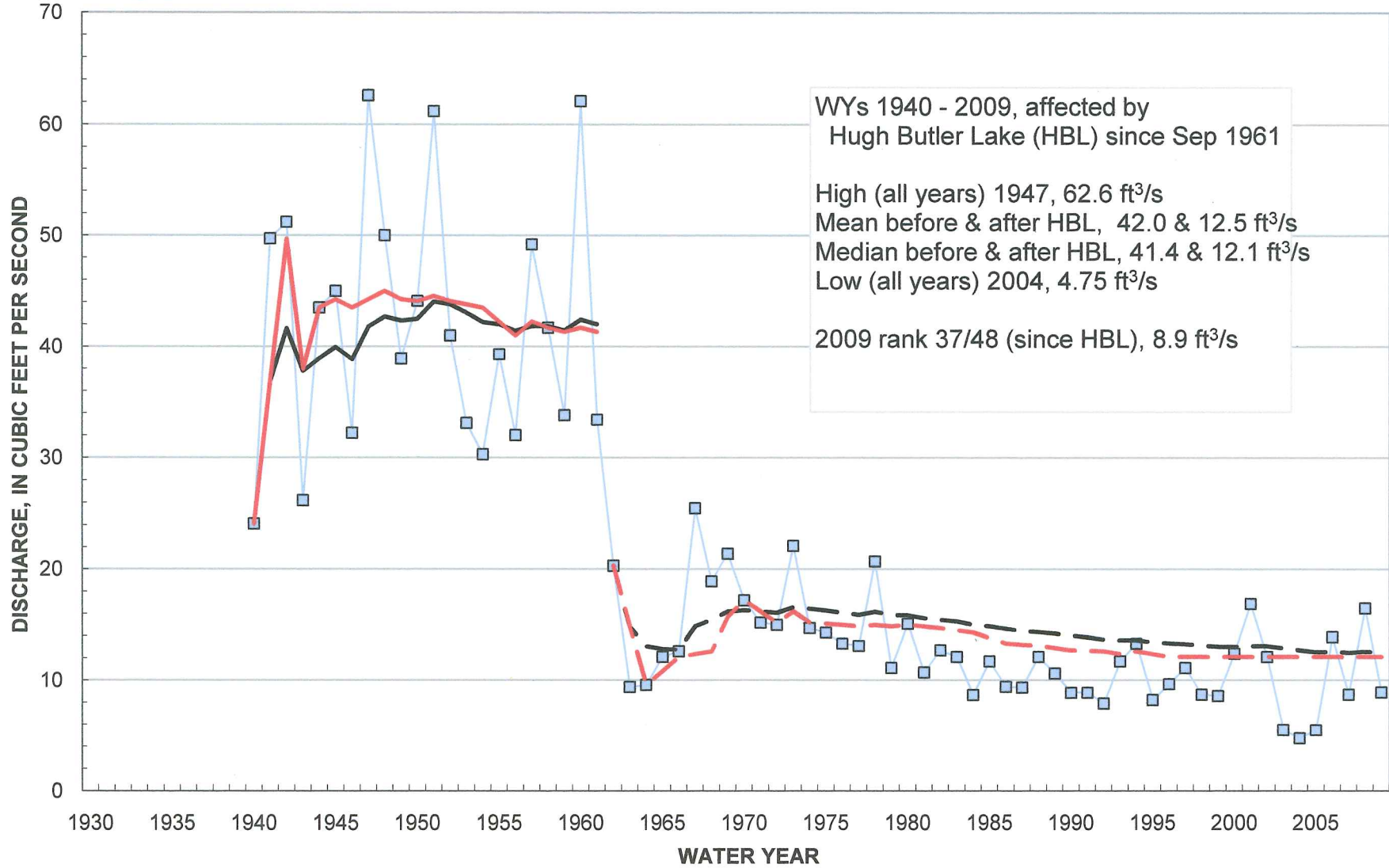


06838000 Red Willow Creek near Red Willow, NE





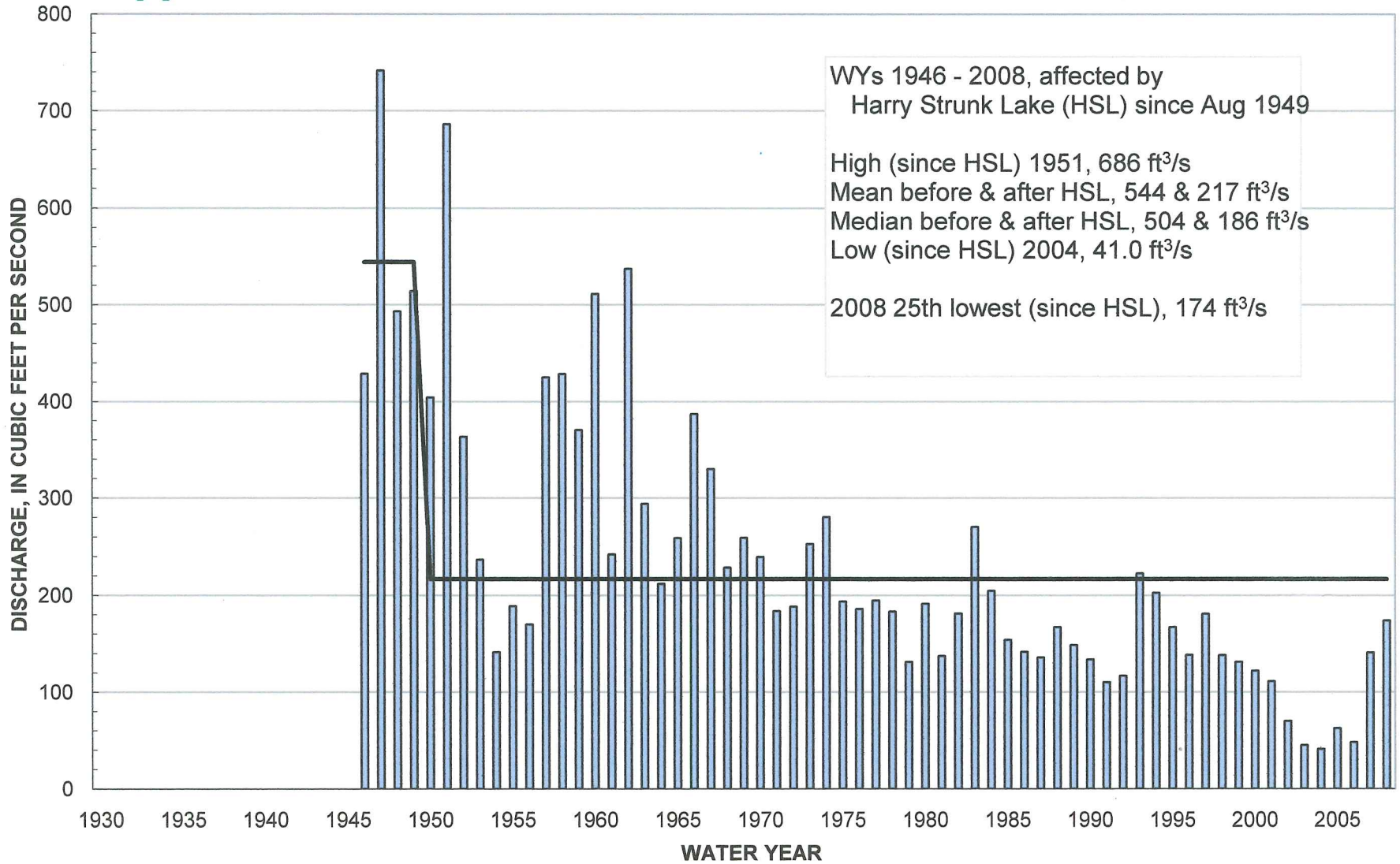
06838000 Red Willow Creek near Red Willow, NE



—■— Annual mean    — Cumulative mean    - - - after HBL    — Cumulative median    - - - after HBL



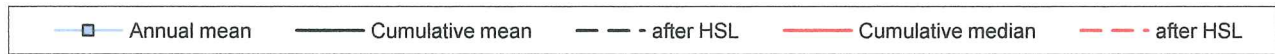
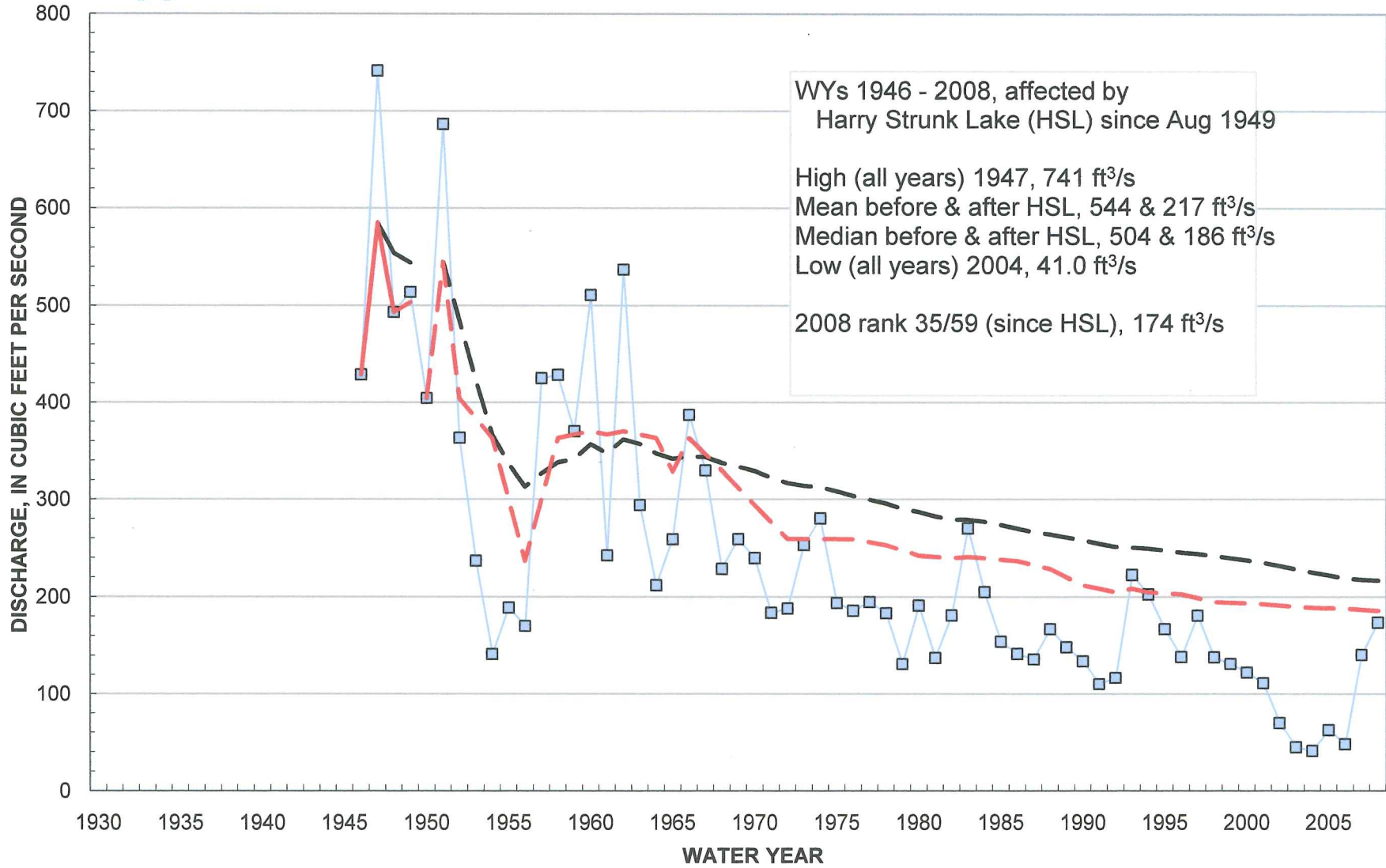
### 06843500 Republican River at Cambridge, NE



Annual mean      Long-term mean

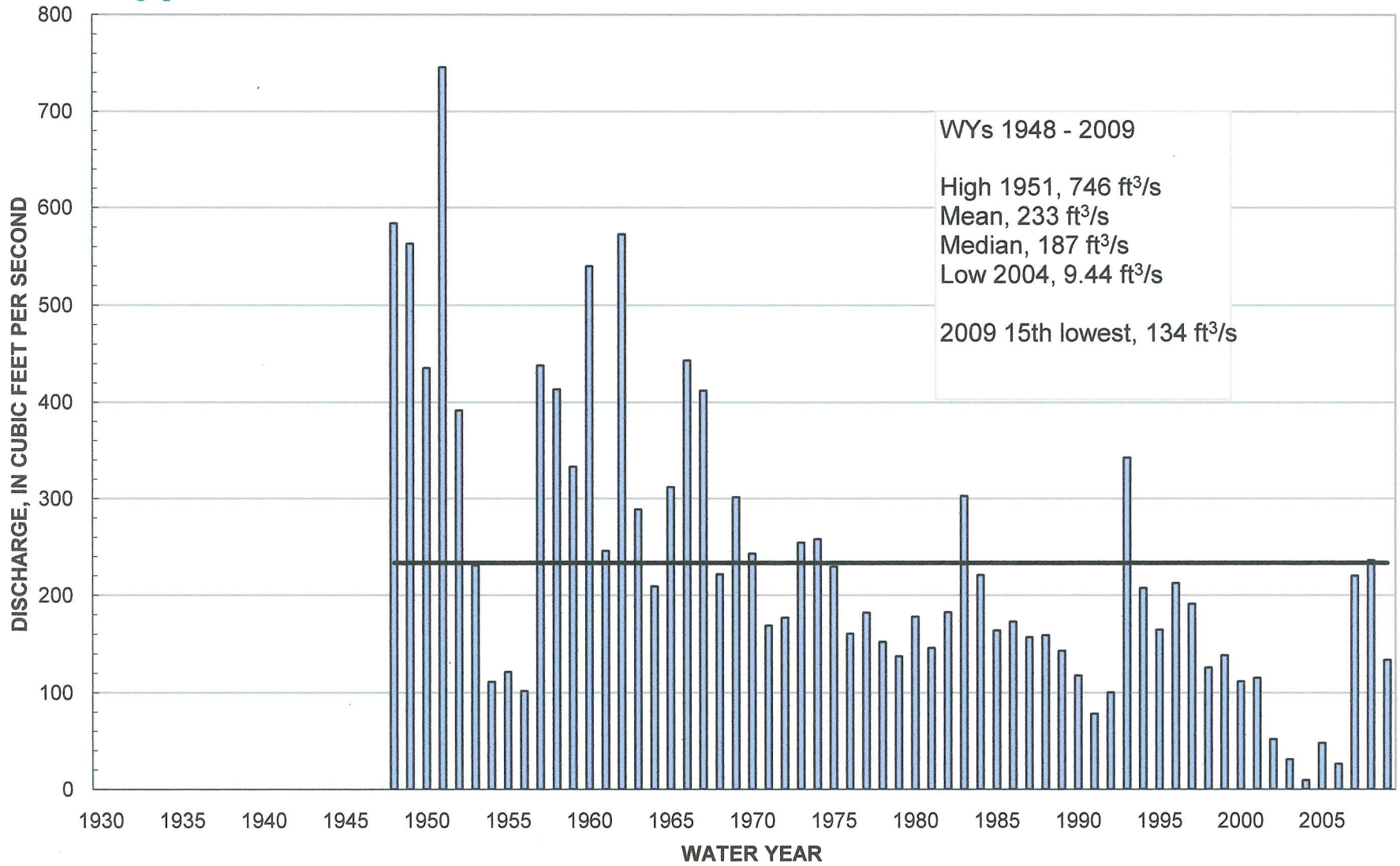


### 06843500 Republican River at Cambridge, NE





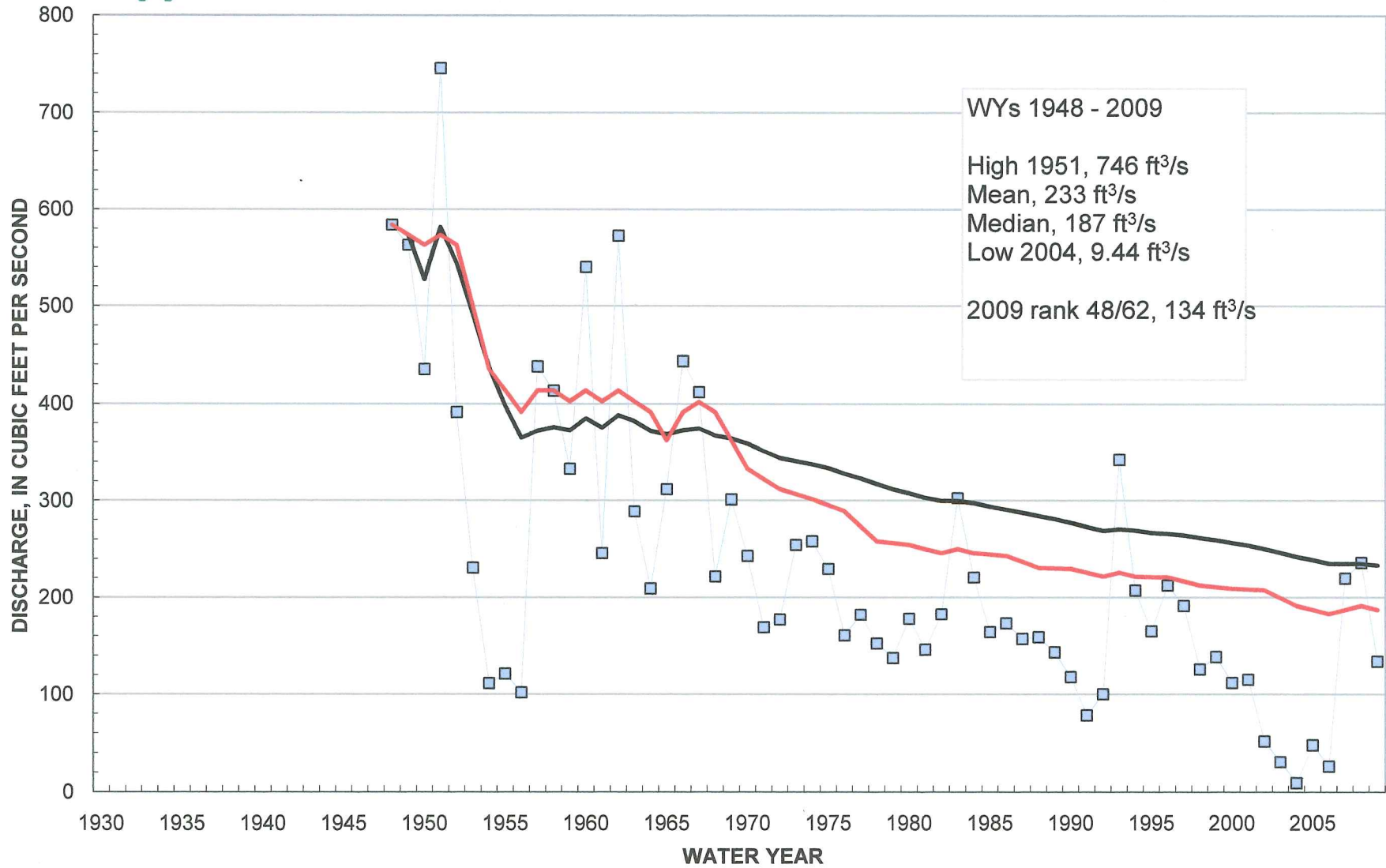
06844500 Republican River near Orleans, NE



Annual mean    Long-term mean



06844500 Republican River near Orleans, NE



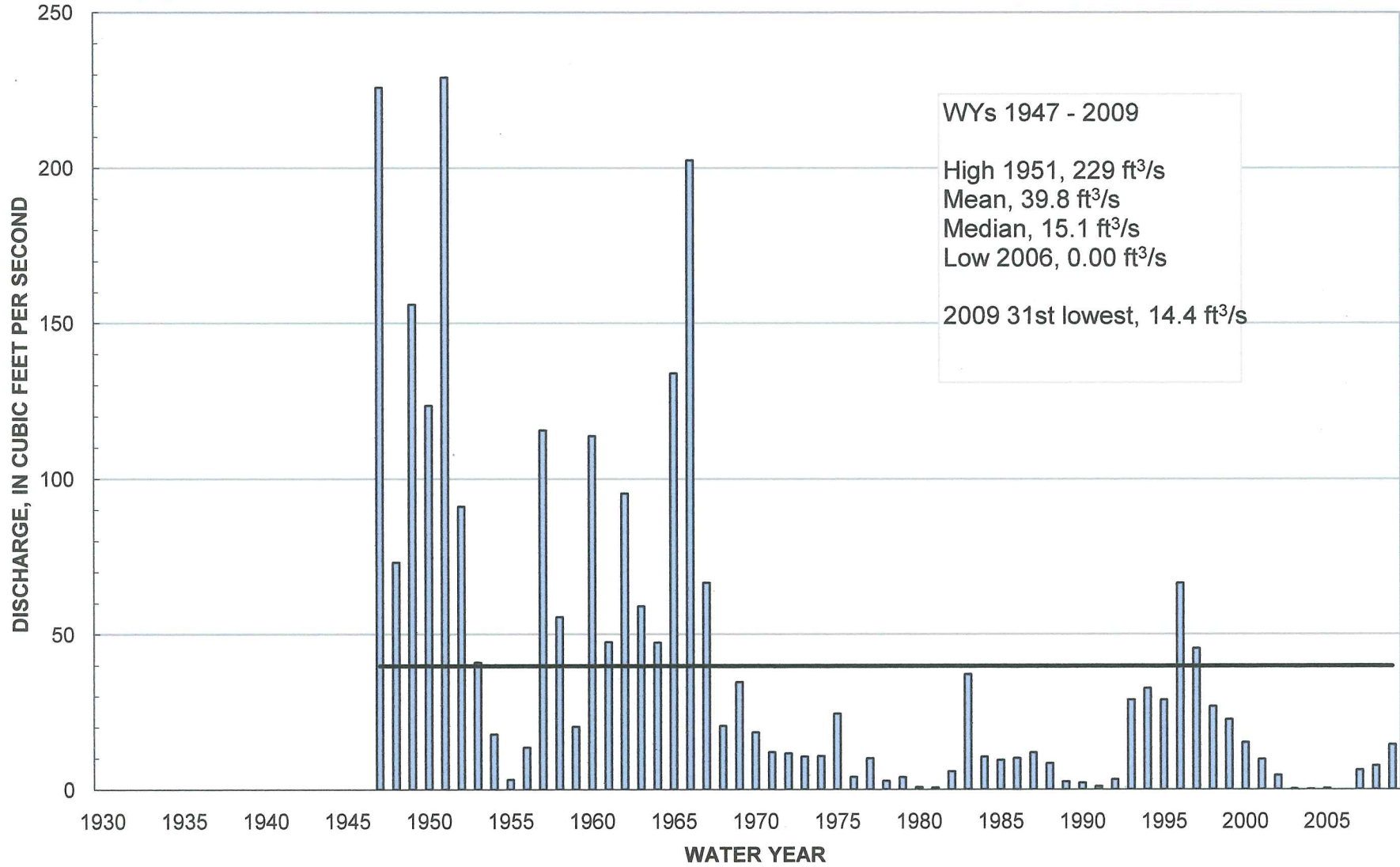
WYs 1948 - 2009  
High 1951, 746 ft<sup>3</sup>/s  
Mean, 233 ft<sup>3</sup>/s  
Median, 187 ft<sup>3</sup>/s  
Low 2004, 9.44 ft<sup>3</sup>/s  
2009 rank 48/62, 134 ft<sup>3</sup>/s

■ Annual mean — Cumulative mean — Cumulative median





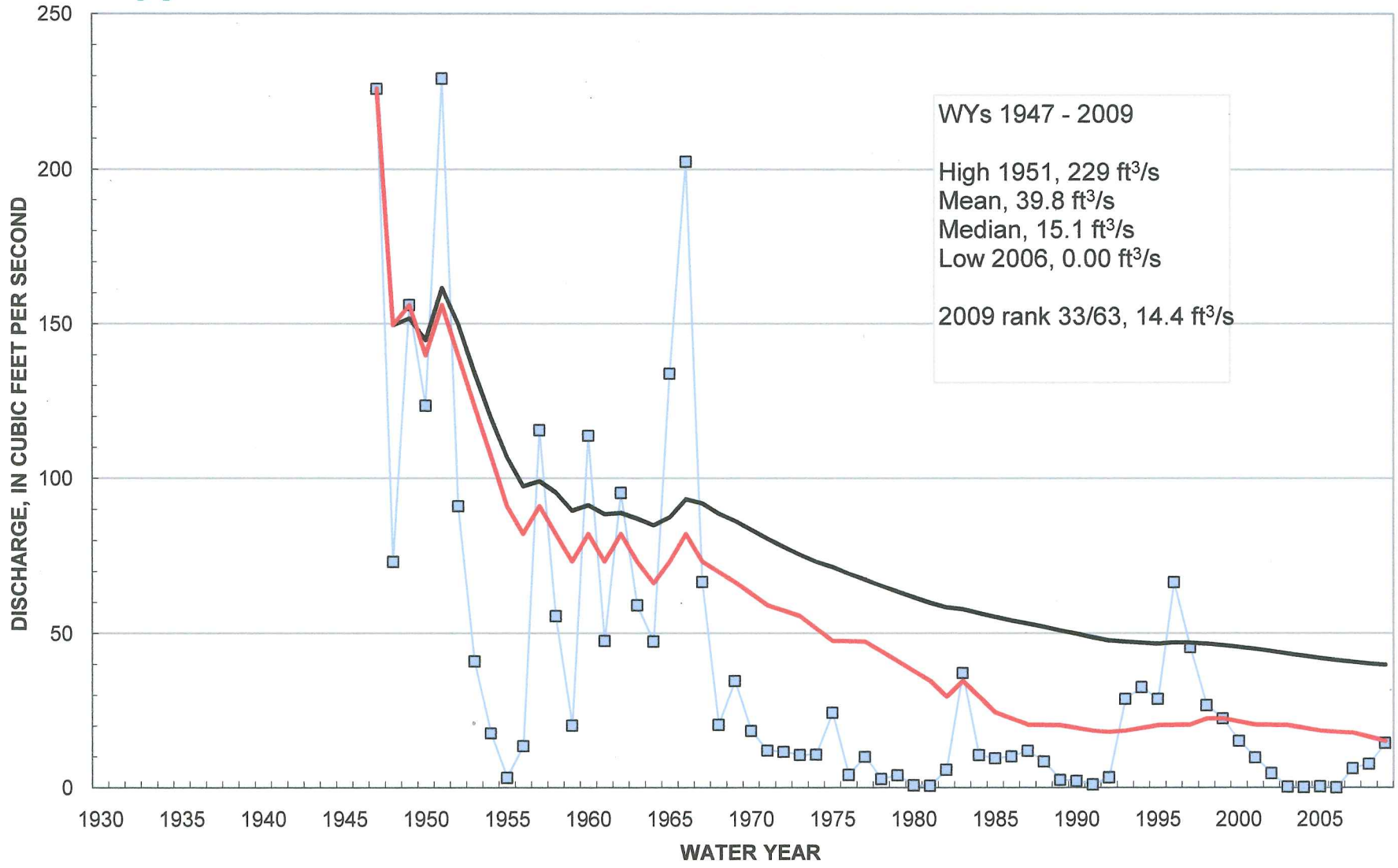
06847500 Sappa Creek near Stamford, NE



Annual mean    Long-term mean



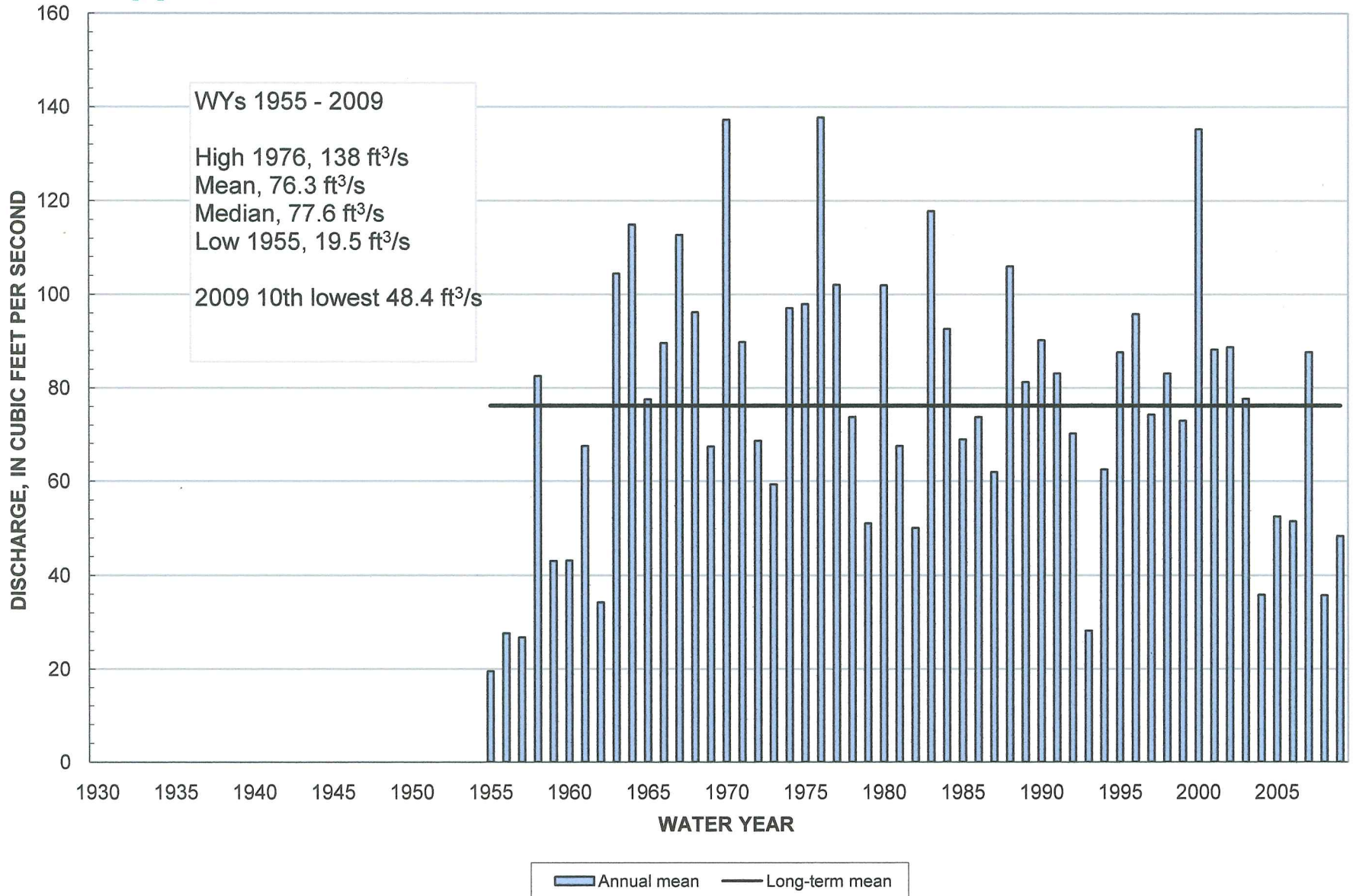
06847500 Sappa Creek near Stamford, NE



■ Annual mean — Cumulative mean — Cumulative median

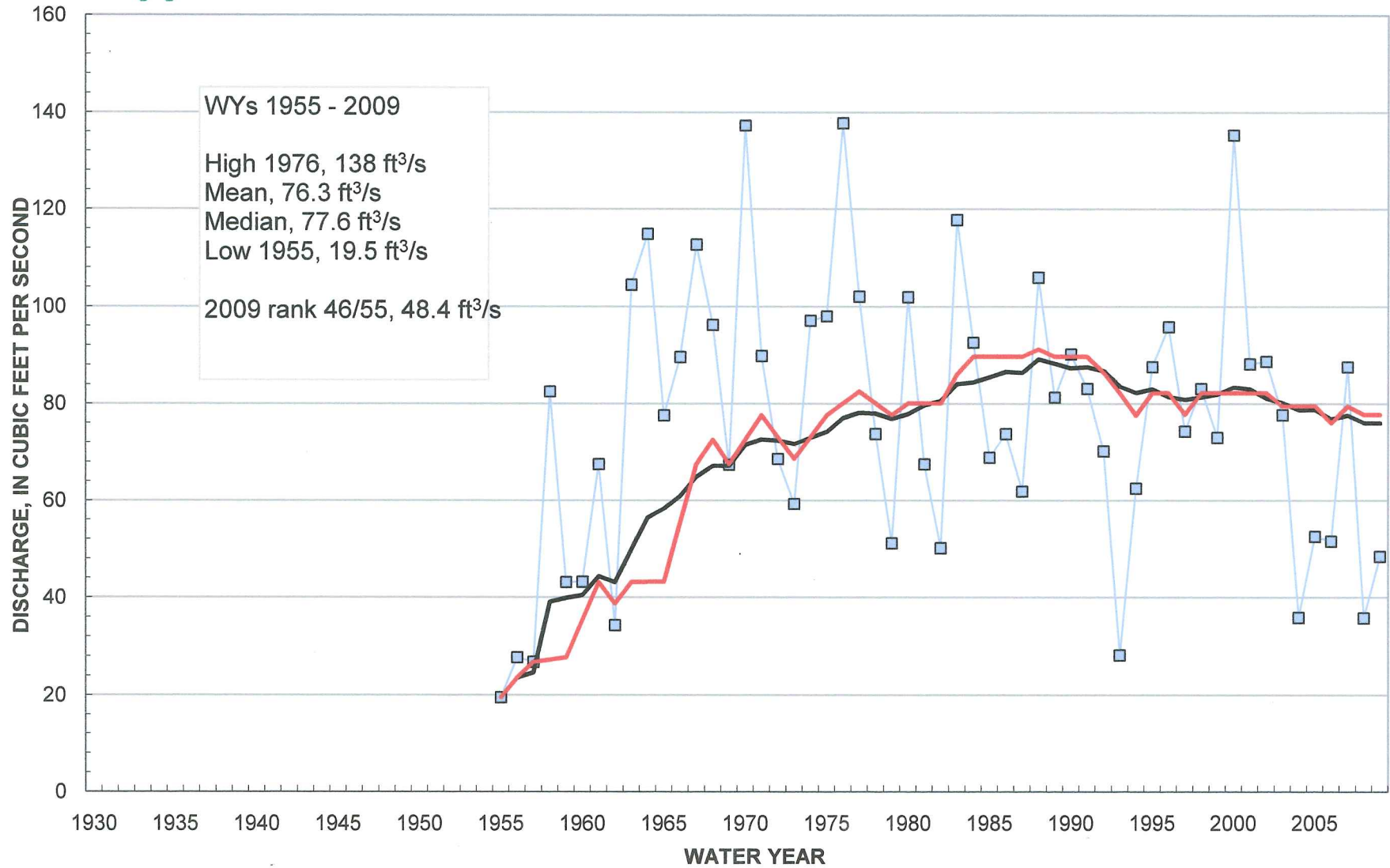


### 06852500 Courtland Canal at NE-KS State Line





### 06852500 Courtland Canal at NE-KS State Line





Water-Data Report 2009

**06821500 Arikaree River at Haigler, Nebr.**

Republican Basin  
Arikaree Subbasin

LOCATION.--Lat 40°01'45", long 101°58'03" referenced to North American Datum of 1983, in NE ¼ NE ¼ sec.29, T.1 N., R.41 W., Dundy County, NE, Hydrologic Unit 10250001, on right bank at downstream side of bridge on U.S. Highway 34, 1.3 mi upstream from Burlington Northern Inc. bridge, 1.9 mi upstream from confluence with North Fork Republican River, 2 mi northwest of Haigler, and 3.2 mi downstream from Kansas-Nebraska state line.

DRAINAGE AREA.--1,700 mi<sup>2</sup> of which 680 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1919: 1951, 1954, 1956, 1960. WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 3,250.98 ft above sea level. See WSP 1919 for history of changes prior to Sept 29, 1964. Sept 29, 1964 to Apr 25, 1982, on left bank 57 ft downstream from bridge at present datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals and diversions for irrigation of about 1,500 acres in Colorado and by return flow from Haigler Canal.

## 06821500 Arikaree River at Haigler, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.01	0.00	0.00	e0.00	e0.15	e0.52	0.21	3.1	5.1	1.4	0.90	0.07
2	0.67	0.00	0.00	e0.00	e0.31	e0.69	0.23	0.73	5.9	1.5	1.1	0.09
3	1.5	0.00	0.00	0.00	e0.37	e0.74	0.31	0.61	4.6	1.9	1.3	0.46
4	0.78	0.00	0.00	0.00	e0.42	e0.79	0.44	0.47	3.6	4.1	0.87	1.5
5	2.5	0.00	0.00	0.00	e0.44	e0.73	0.36	0.38	1.9	3.9	0.40	0.07
6	2.1	0.00	0.00	0.00	e0.50	e0.67	0.52	0.30	1.3	2.4	1.2	0.00
7	0.16	0.00	0.00	0.00	e0.67	e0.59	0.46	0.25	2.2	0.69	0.94	0.00
8	0.35	0.00	0.00	0.00	e0.85	e0.81	0.42	0.22	5.5	0.25	2.3	0.00
9	e1.6	0.00	0.00	0.00	e1.0	e0.84	0.38	0.16	3.1	0.22	0.16	0.81
10	e1.5	0.00	0.00	0.00	e1.2	e0.83	0.31	0.18	0.93	0.74	0.95	0.50
11	e1.6	0.00	0.00	0.00	e1.1	e0.62	0.32	0.17	0.57	1.3	1.9	0.02
12	e2.0	0.00	0.00	0.00	e1.1	e0.74	0.39	2.5	0.46	0.53	1.6	0.18
13	e2.4	0.00	0.00	0.00	e1.0	e0.97	0.44	3.4	0.30	2.5	1.5	0.68
14	e2.8	0.00	0.00	0.00	e0.85	e0.66	0.34	3.5	3.6	1.7	0.83	0.96
15	e1.0	0.00	0.00	0.00	e0.75	e0.60	0.29	2.0	6.3	0.23	0.60	0.85
16	e0.40	0.00	0.00	0.00	e0.58	e0.49	0.20	1.6	4.7	0.01	2.5	0.08
17	e0.10	0.00	0.00	0.00	e0.61	e0.49	1.0	0.81	2.0	0.00	1.5	0.02
18	e0.10	0.00	0.00	0.00	e0.74	e0.43	6.0	0.86	0.44	1.9	0.62	0.04
19	e0.10	0.00	0.00	e0.05	e0.78	e0.32	2.3	2.1	0.18	3.0	0.69	0.39
20	e0.10	0.00	e0.00	e0.13	e0.78	e0.37	1.5	0.42	1.4	2.5	0.68	0.68
21	0.01	0.00	e0.00	e0.15	e0.67	e0.35	1.1	0.01	2.1	0.80	0.91	1.5
22	0.00	0.00	e0.00	e0.24	e0.76	e0.26	0.88	0.84	2.6	0.62	1.6	2.0
23	0.00	0.00	e0.00	e0.30	e0.92	e0.26	0.73	2.9	1.1	0.69	0.67	8.5
24	0.00	0.00	e0.00	e0.22	e0.94	0.11	0.63	0.46	0.30	0.14	1.4	3.5
25	0.00	0.00	e0.00	e0.14	e0.80	0.08	0.55	2.3	0.91	0.24	3.3	0.57
26	0.00	0.00	e0.00	e0.10	e0.78	0.06	0.55	5.3	1.9	1.5	2.9	0.02
27	0.00	0.00	e0.00	e0.08	e0.71	0.08	0.46	9.5	2.1	3.5	0.84	0.00
28	0.00	0.00	e0.00	0.00	e0.50	0.13	2.4	3.9	0.50	2.3	0.80	0.00
29	0.00	0.00	e0.00	0.00	---	0.25	8.1	1.8	0.57	1.8	0.68	0.10
30	0.00	0.00	e0.00	0.00	---	0.18	7.8	2.7	0.45	3.7	0.33	1.2
31	0.00	---	e0.00	0.00	---	0.17	---	3.6	---	0.74	0.25	---
<b>Total</b>	21.78	0.00	0.00	1.41	20.28	14.83	39.62	57.07	66.61	46.80	36.22	24.79
<b>Mean</b>	0.70	0.00	0.00	0.05	0.72	0.48	1.32	1.84	2.22	1.51	1.17	0.83
<b>Max</b>	2.8	0.00	0.00	0.30	1.2	0.97	8.1	9.5	6.3	4.1	3.3	8.5
<b>Min</b>	0.00	0.00	0.00	0.00	0.15	0.06	0.20	0.01	0.18	0.00	0.16	0.00
<b>Ac-ft</b>	43	0.00	0.00	2.8	40	29	79	113	132	93	72	49

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	8.82	7.23	5.72	6.78	13.8	24.7	20.7	36.3	35.5	17.6	16.5	13.5
<b>Max</b>	39.8	31.8	28.3	24.0	67.0	400	78.0	709	599	193	111	140
<b>(WY)</b>	(1943)	(1947)	(1939)	(1934)	(1937)	(1960)	(1944)	(1935)	(1935)	(1962)	(1938)	(1938)
<b>Min</b>	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.07	0.00	0.00	0.00
<b>(WY)</b>	(2005)	(2002)	(2002)	(2003)	(2003)	(2004)	(2004)	(2004)	(2002)	(2002)	(1952)	(2002)

06821500 Arikaree River at Haigler, Nebr.—Continued

SUMMARY STATISTICS

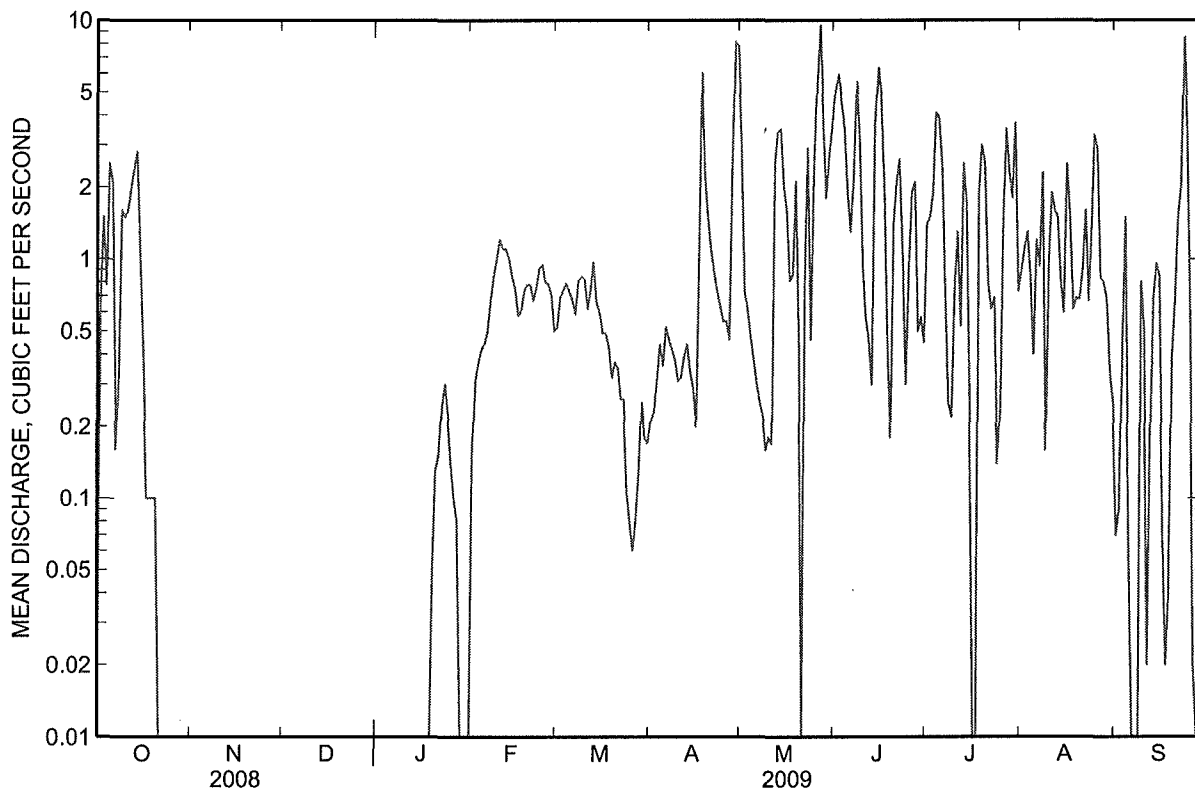
	Calendar Year 2008		Water Year 2009		Water Years 1932 - 2009	
Annual total	790.27		329.41			
Annual mean	2.16		0.90		17.2	
Highest annual mean					127	1935
Lowest annual mean					0.28	2002
Highest daily mean	13	May 24	9.5	May 27	17,000	May 31, 1935
Lowest daily mean	0.00	Jan 1	0.00	Oct 22	0.00	Jul 21, 1932
Annual seven-day minimum	0.00	Jan 1	0.00	Oct 22	0.00	Jul 30, 1934
Maximum peak flow			<sup>a</sup> 13	May 27	<sup>b</sup> 50,000	May 31, 1935
Maximum peak stage			<sup>c</sup> 6.74	Oct 6	<sup>d</sup> 11.20	May 31, 1935
Annual runoff (ac-ft)	1,570		653		12,480	
10 percent exceeds	6.5		2.5		28	
50 percent exceeds	0.57		0.44		7.0	
90 percent exceeds	0.00		0.00		0.12	

<sup>a</sup> Gage height, 5.28 ft.

<sup>b</sup> From rating curve extended above 3,800 ft<sup>3</sup>/s on basis of slope-area measurement.

<sup>c</sup> Backwater from beaver activity.

<sup>d</sup> Site and datum then in use.





Water-Data Report 2009

**06823000 North Fork Republican River at Colorado-Nebraska State Line**

Republican Basin  
North Fork Republican Subbasin

LOCATION.--Lat 40°04'10", long 102°03'03" referenced to North American Datum of 1927, in NW ¼ SW ¼ sec.10, T.1 N., R.42 W., Dundy County, NE, Hydrologic Unit 10250002, on right bank 100 ft east of Colorado-Nebraska State line, 9.5 mi upstream from confluence with Arikaree River, and at mile 448.

DRAINAGE AREA.--2,370 mi<sup>2</sup> of which 2,196 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1930 to current year. Prior to October 1932, published as North Fork of Arikaree River at Colorado-Nebraska State line. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1240: 1947(M). WSP 1390: 1934. WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Steel piling control since January 1965. Datum of gage is 3,336.09 ft above sea level. Prior to October 17, 1934, non-recording gage at present site and datum.

REMARKS.--Record good except for estimated daily discharges, which are poor. Natural flow affected by diversion in Haigler Canal for irrigation of about 2,700 acres in Colorado and Nebraska.



## 06823000 North Fork Republican River at Colorado-Nebraska State Line—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	18	39	36	45	48	40	43	88	28	21	15	9.2
2	19	39	37	44	45	41	42	62	37	21	12	6.7
3	19	40	37	44	44	41	42	51	38	17	9.8	5.4
4	19	e40	37	e42	44	41	43	47	36	15	8.4	21
5	20	e38	37	e41	44	40	45	42	35	14	5.7	29
6	20	e37	38	e43	44	40	47	42	32	12	5.1	27
7	20	39	36	e43	45	40	47	38	26	13	5.1	27
8	20	40	37	42	44	39	47	38	29	12	14	14
9	18	e41	38	41	48	39	48	39	33	10	16	11
10	19	43	37	43	47	38	49	41	36	8.7	11	11
11	20	e43	37	42	41	39	50	39	36	23	12	9.9
12	24	e40	37	43	41	38	50	34	40	25	8.8	11
13	41	e39	36	46	42	38	56	35	38	21	7.2	12
14	38	38	e32	45	43	39	56	35	36	15	6.1	13
15	37	37	e29	45	41	38	56	34	33	11	5.2	13
16	40	37	e34	e44	42	37	64	31	38	9.4	6.1	10
17	41	37	e38	46	43	37	71	30	39	7.1	5.8	9.0
18	41	36	e40	45	42	37	84	29	37	5.5	5.3	9.2
19	39	36	e42	47	41	37	73	33	30	5.7	5.6	8.7
20	40	35	e40	48	41	37	60	35	28	5.8	6.3	8.8
21	37	34	e35	48	41	37	55	35	31	5.9	6.3	8.8
22	39	33	e39	44	41	37	56	32	33	5.2	5.5	9.9
23	38	33	e39	44	41	38	58	28	31	4.9	4.5	33
24	41	32	e41	43	41	38	59	27	28	4.1	3.9	43
25	38	32	e45	e41	41	36	64	27	23	4.0	5.5	36
26	38	32	e48	e44	41	38	64	45	25	4.2	16	31
27	39	33	e42	e41	41	40	63	53	26	5.9	31	29
28	39	33	e41	e36	40	44	57	45	27	11	29	29
29	40	34	e41	e44	---	45	59	38	23	10	21	21
30	39	34	e43	e45	---	44	84	28	22	25	20	20
31	38	---	e43	e50	---	43	---	26	---	20	14	---
<b>Total</b>	979	1,104	1,192	1,359	1,197	1,216	1,692	1,207	954	372.4	327.2	526.6
<b>Mean</b>	31.6	36.8	38.5	43.8	42.8	39.2	56.4	38.9	31.8	12.0	10.6	17.6
<b>Max</b>	41	43	48	50	48	45	84	88	40	25	31	43
<b>Min</b>	18	32	29	36	40	36	42	26	22	4.0	3.9	5.4
<b>Ac-ft</b>	1,940	2,190	2,360	2,700	2,370	2,410	3,360	2,390	1,890	739	649	1,040

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2009, BY WATER YEAR (WY)**

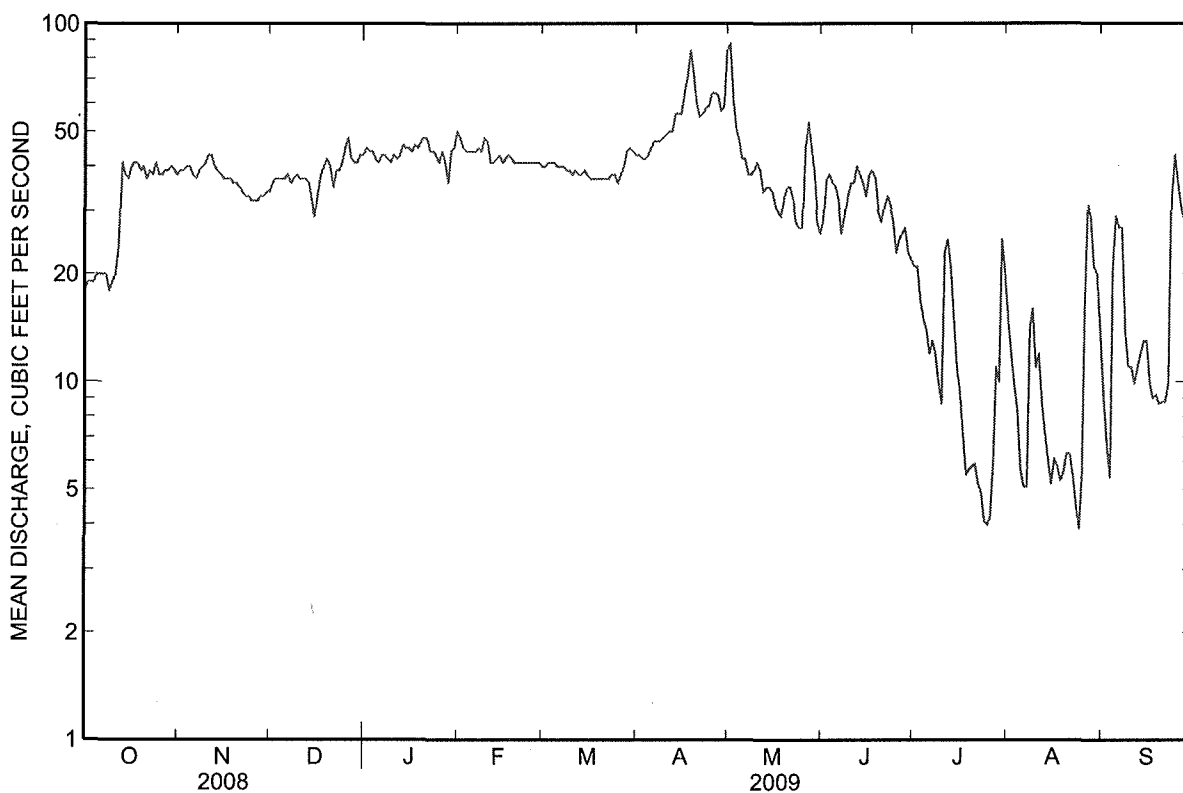
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	35.1	54.0	57.8	58.1	59.4	61.7	54.5	38.0	32.2	17.2	17.4	24.0
<b>Max</b>	67.1	83.5	74.7	73.4	76.8	85.8	85.7	104	113	93.8	72.4	128
<b>(WY)</b>	(1963)	(1957)	(1954)	(1953)	(1960)	(1960)	(1980)	(1951)	(1962)	(1962)	(1950)	(1951)
<b>Min</b>	11.1	26.3	34.5	39.4	35.2	39.2	21.3	7.24	5.80	3.76	4.12	5.78
<b>(WY)</b>	(1979)	(2004)	(2002)	(1979)	(2002)	(2009)	(1999)	(2000)	(2002)	(2002)	(1940)	(1978)

06823000 North Fork Republican River at Colorado-Nebraska State Line—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1935 - 2009	
Annual total	10,909.0		12,126.2			
Annual mean	29.8		33.2		42.5	
Highest annual mean					65.3	1951
Lowest annual mean					24.0	2006
Highest daily mean	54	Mar 11	88	May 1	761	May 15, 1951
Lowest daily mean	3.6	Jul 24	3.9	Aug 24	1.5	Sep 12, 1999
Annual seven-day minimum	4.9	Jul 22	4.9	Jul 20	2.3	Aug 5, 1940
Maximum peak flow			118	Apr 30	<sup>a</sup> 2,110	Apr 28, 1947
Maximum peak stage			1.81	Apr 30	5.92	Apr 28, 1947
Annual runoff (ac-ft)	21,640		24,050		30,770	
10 percent exceeds	45		47		71	
50 percent exceeds	35		37		45	
90 percent exceeds	8.3		9.1		8.3	

<sup>a</sup> From rating curve extended above 800 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.





Water-Data Report 2009

**06823500 Buffalo Creek near Haigler, Nebr.**

Republican Basin  
North Fork Republican Subbasin

LOCATION.--Lat 40°02'22", long 101°52'00" referenced to North American Datum of 1983, in SE ¼ NW ¼ sec.20, T.1 N., R.40 W., Dundy County, NE, Hydrologic Unit 10250002, on upstream side of bridge, 0.4 mi upstream from mouth, and 4 mi northeast of Haigler.

DRAINAGE AREA.--172.00 mi<sup>2</sup> of which 163.4 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 2119: 1948-50(M), 1957(M). WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 3,189.00 ft above sea level. Prior to September 19, 1980, at site 0.5 mi upstream at datum 15.57 ft higher. September 18, 1980 to June 4, 1996, on left bank 15 ft upstream from county highway bridge at datum 0.10 ft lower. June 4, 1996 to November 7, 1996, 135 ft downstream from county highway bridge, at datum 0.10 ft lower.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Natural flow affected by diversion about 1 mi upstream for irrigation of 880 acres.

## 06823500 Buffalo Creek near Haigler, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.8	4.0	e4.5	e3.8	e6.4	e1.9	e4.5	5.9	3.1	1.7	2.6	2.6
2	2.7	4.0	e4.8	e4.2	6.2	3.5	e4.3	5.4	6.0	2.0	2.4	2.5
3	2.8	4.0	e4.6	e3.8	5.3	3.2	e3.9	5.6	5.1	2.1	1.1	2.3
4	2.8	4.0	e4.2	e3.1	5.0	3.7	e4.3	5.5	4.3	2.1	0.01	2.2
5	2.8	3.6	e3.3	e2.8	4.8	3.8	4.2	5.0	3.5	2.0	0.00	2.3
6	2.7	4.2	e3.5	e3.3	4.9	3.7	7.1	4.5	3.1	2.0	0.00	2.2
7	2.4	4.2	6.0	e4.0	4.9	3.4	4.9	4.6	3.0	1.4	0.00	2.2
8	2.0	4.2	5.4	e4.7	4.8	3.7	4.3	4.7	3.2	0.50	0.00	1.0
9	2.3	4.0	e4.8	e4.4	6.6	3.8	4.1	4.2	3.2	0.97	0.00	0.00
10	2.3	e4.2	e4.7	4.2	5.7	e3.1	4.1	4.3	3.5	2.3	0.00	0.00
11	2.8	e4.8	e5.5	e4.3	4.4	e2.3	4.0	4.5	3.4	2.3	0.00	0.00
12	5.1	e5.4	e5.6	e3.8	3.8	e3.0	e4.7	4.4	5.2	2.3	0.43	1.2
13	5.3	5.0	e5.8	e4.1	3.7	4.1	e5.4	4.1	4.9	2.2	2.2	2.4
14	4.6	e5.0	e1.9	e4.4	3.8	3.7	e4.7	3.8	5.0	1.0	2.1	1.1
15	3.7	e4.8	e2.3	e3.0	3.9	3.6	e4.1	1.9	3.9	0.03	1.0	0.00
16	3.3	e4.6	e2.6	e4.8	4.0	3.5	5.1	0.43	4.3	0.01	0.14	0.00
17	3.1	e4.6	e2.9	e7.3	4.1	3.4	7.5	0.44	2.2	0.00	0.33	0.20
18	3.1	e4.8	e2.6	6.2	3.8	3.3	10	0.81	0.64	0.94	0.42	0.91
19	3.1	4.8	e2.5	5.5	3.6	3.2	7.6	0.69	0.95	2.0	2.8	2.2
20	3.0	4.4	e2.0	5.6	3.5	3.3	5.7	0.68	2.7	1.8	2.7	2.1
21	3.3	4.2	e2.0	4.8	3.6	3.4	4.7	2.2	3.5	1.2	2.4	2.2
22	3.9	4.4	e2.9	4.9	3.9	3.5	4.4	4.3	3.4	0.36	1.6	2.7
23	4.1	4.2	e2.5	4.8	3.9	3.7	4.2	4.2	3.0	0.87	0.02	3.8
24	4.1	4.2	e2.3	5.1	3.9	3.6	4.0	4.0	2.5	1.9	0.02	5.6
25	4.0	4.2	e3.3	e3.9	3.9	3.6	4.0	6.1	2.2	1.9	0.00	4.8
26	e4.0	4.2	e4.0	e3.1	3.7	3.3	4.1	15	1.2	1.5	0.00	3.7
27	e4.0	4.2	e3.6	e2.7	2.8	3.7	4.1	11	0.29	0.04	0.02	2.9
28	e4.2	4.3	e5.1	e3.0	e2.3	6.1	4.0	7.1	0.38	0.01	0.09	2.5
29	4.0	4.5	e4.8	e4.0	---	5.1	4.1	4.7	0.39	0.88	0.40	2.4
30	4.1	e4.5	e4.2	e4.7	---	5.0	5.6	3.7	0.35	2.3	2.7	2.3
31	4.0	---	e3.5	e5.6	---	4.3	---	3.2	---	2.9	2.8	---
<b>Total</b>	106.4	131.5	117.7	133.9	121.2	112.5	147.7	136.95	88.40	43.51	28.28	60.31
<b>Mean</b>	3.43	4.38	3.80	4.32	4.33	3.63	4.92	4.42	2.95	1.40	0.91	2.01
<b>Max</b>	5.3	5.4	6.0	7.3	6.6	6.1	10	15	6.0	2.9	2.8	5.6
<b>Min</b>	2.0	3.6	1.9	2.7	2.3	1.9	3.9	0.43	0.29	0.00	0.00	0.00
<b>Ac-ft</b>	211	261	233	266	240	223	293	272	175	86	56	120

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	6.24	7.35	7.55	7.76	8.31	8.53	8.42	7.20	5.15	2.38	2.30	3.90
<b>Max</b>	12.6	12.1	13.7	12.7	12.9	14.3	14.2	12.5	13.2	11.0	19.7	15.2
<b>(WY)</b>	(1943)	(1947)	(1946)	(1942)	(1960)	(1952)	(1944)	(1944)	(1962)	(1948)	(1950)	(1951)
<b>Min</b>	0.32	1.59	2.53	2.60	0.89	2.72	2.39	1.23	0.00	0.00	0.00	0.23
<b>(WY)</b>	(2004)	(2004)	(2006)	(2006)	(1998)	(1998)	(2008)	(2006)	(1994)	(1997)	(2000)	(1998)

06823500 Buffalo Creek near Haigler, Nebr.—Continued

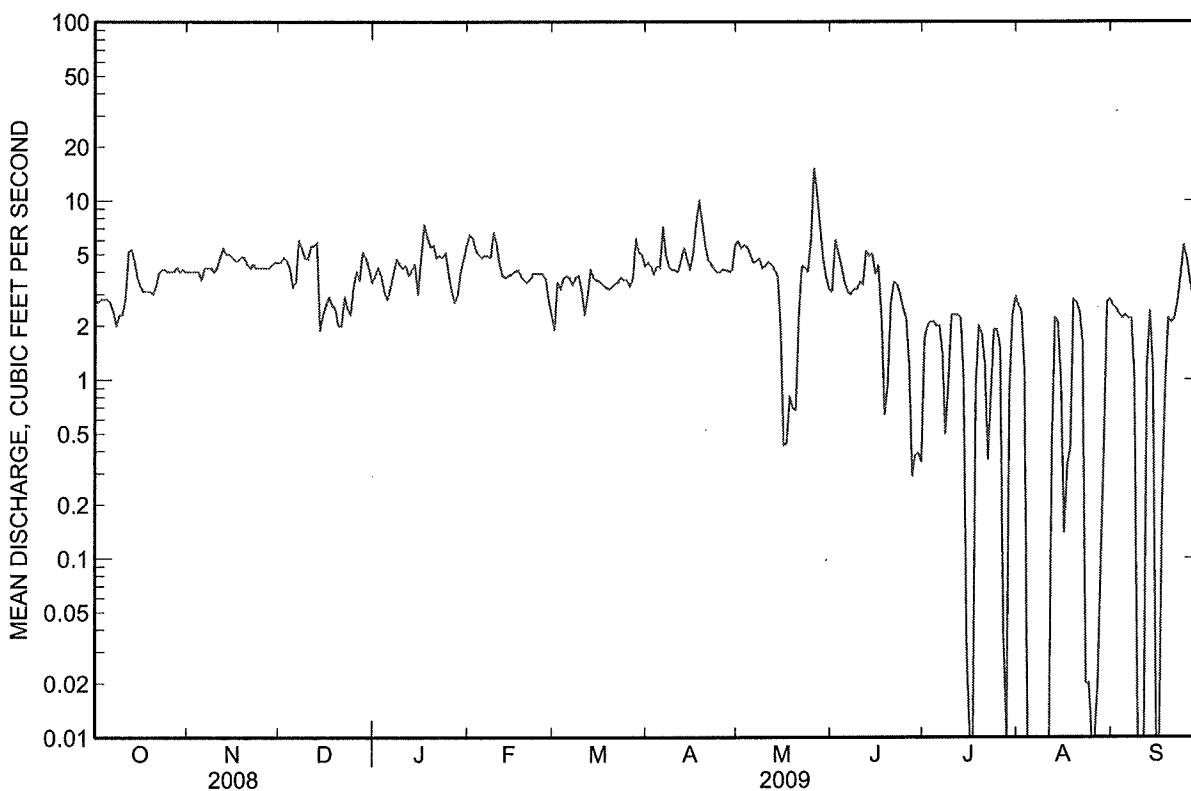
SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1941 - 2009	
Annual total	1,103.94		1,228.35			
Annual mean	3.02		3.37		6.24	
Highest annual mean					10.9	1951
Lowest annual mean					2.17	2006
Highest daily mean	6.4	Feb 13	15	May 26	90	Aug 11, 1950
Lowest daily mean	0.00	Jul 21	0.00	Jul 17	0.00	Aug 3, 1955
Annual seven-day minimum	0.01	Jul 21	0.00	Aug 5	0.00	Aug 14, 1973
Maximum peak flow			<sup>a</sup> 17	May 26	<sup>b</sup> 140	Jun 27, 1948
Maximum peak stage			<sup>c</sup> 2.44	Dec 27	<sup>c</sup> 5.93	Jan 3, 1976
Annual runoff (ac-ft)	2,190		2,440		4,520	
10 percent exceeds	5.0		5.1		11	
50 percent exceeds	3.2		3.7		6.6	
90 percent exceeds	0.11		0.44		0.17	

<sup>a</sup> Gage height, 2.35 ft.

<sup>b</sup> Gage height, 4.37 ft, site and datum then in use.

<sup>c</sup> Backwater from ice.





Water-Data Report 2009

**06824000 Rock Creek at Parks, Nebr.**

Republican Basin  
North Fork Republican Subbasin

LOCATION.--Lat 40°02'32", long 101°43'41" referenced to North American Datum of 1983, in SW ¼ NE ¼ sec.21, T.1 N., R.39 W., Dundy County, NE, Hydrologic Unit 10250002, on right bank at west edge of Parks, 100 ft downstream from county road bridge and 0.5 mi upstream from mouth.

DRAINAGE AREA.--23.60 mi<sup>2</sup> of which 3.60 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1630: 1951(M). WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 3,093.35 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. One diversion about 2 mi above station for irrigation of 215 acres; flow regulated at times by reservoir at State fish hatchery 7 mi upstream.

## 06824000 Rock Creek at Parks, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4.8	e6.6	e7.5	e6.2	6.1	6.7	7.4	8.0	6.3	4.9	6.7	6.7
2	4.8	e6.6	e7.7	e7.4	6.0	6.8	7.3	7.7	8.9	4.8	6.2	6.6
3	4.8	e6.4	e7.5	e6.3	6.0	7.0	7.3	8.1	9.2	4.8	5.9	6.7
4	4.7	e6.3	e7.5	e5.6	6.0	7.0	7.7	8.0	8.3	4.7	5.6	6.5
5	4.8	e6.3	e6.8	e4.8	6.0	7.1	9.1	7.5	7.4	4.3	5.5	6.4
6	5.2	e6.7	e6.6	e6.4	6.0	7.0	8.7	7.1	6.7	4.3	5.5	6.3
7	5.2	e6.9	e7.4	e6.9	6.0	6.8	8.3	7.3	6.3	6.2	5.4	6.0
8	5.1	e6.9	e8.0	7.0	6.0	7.0	8.0	7.4	6.4	5.3	5.3	5.7
9	5.1	e6.6	e7.3	6.8	8.6	6.9	7.8	6.8	6.1	4.8	5.2	5.8
10	5.0	e6.9	e6.7	e4.8	8.5	6.9	8.0	6.8	6.4	4.8	6.0	5.9
11	5.6	e7.2	e8.0	e6.7	7.5	6.8	7.8	6.8	6.5	4.8	7.0	5.8
12	10	e6.9	e8.0	6.5	6.8	6.6	8.2	6.4	8.0	4.6	6.4	6.0
13	10	e6.9	e8.1	e5.8	6.9	7.1	8.8	6.0	8.0	4.5	5.9	6.1
14	8.8	e6.9	e5.3	6.4	7.1	7.2	8.4	5.4	8.3	4.4	5.5	6.0
15	7.9	e6.9	e5.7	e5.5	6.8	7.2	8.0	4.9	8.0	4.2	5.7	5.8
16	7.3	e6.9	e5.9	e6.5	6.7	7.2	9.0	5.0	7.6	4.2	6.4	5.7
17	6.9	e6.9	e7.0	6.5	6.9	7.3	11	4.8	6.6	4.8	6.6	5.7
18	6.9	e6.9	e6.1	6.5	6.8	7.2	13	5.1	6.1	5.2	6.5	5.7
19	6.6	e6.9	e5.1	6.4	6.6	7.1	9.8	4.9	5.6	e4.9	6.9	5.6
20	6.5	e7.0	e4.4	6.3	6.5	6.9	8.2	4.1	5.5	e4.8	6.6	5.4
21	e6.7	e6.7	e4.6	6.2	6.5	7.2	7.4	4.1	6.9	e5.7	6.1	6.0
22	e7.1	e6.7	e5.7	6.2	6.4	7.1	7.0	4.3	6.4	e5.7	5.5	7.4
23	e7.1	e6.7	e5.2	6.1	6.4	7.2	6.7	4.0	5.7	e5.6	5.3	10
24	e6.7	e6.9	e4.7	e4.8	6.7	7.5	6.7	4.4	5.8	5.4	5.3	11
25	e6.2	e6.9	e6.7	e3.1	6.9	7.4	6.8	6.8	5.8	5.5	5.7	10
26	e6.0	e7.0	e8.0	e4.6	6.9	7.4	6.9	11	6.6	5.6	6.6	8.1
27	e6.0	e7.1	e5.8	e4.8	6.8	8.1	6.7	10	5.9	5.2	6.8	6.9
28	e6.7	e7.4	e7.4	e3.9	6.6	8.0	6.4	7.6	5.2	5.6	7.2	6.1
29	e6.5	e7.8	e7.0	e5.3	---	7.9	6.7	6.3	4.8	6.9	6.8	5.7
30	e6.7	e7.6	e6.6	e7.4	---	7.6	8.7	5.8	4.6	8.5	7.9	5.5
31	e6.3	---	e5.9	e6.8	---	7.8	---	5.6	---	7.6	7.4	---
<b>Total</b>	198.0	206.4	204.2	184.5	187.0	223.0	241.8	198.0	199.9	162.6	191.4	197.1
<b>Mean</b>	6.39	6.88	6.59	5.95	6.68	7.19	8.06	6.39	6.66	5.25	6.17	6.57
<b>Max</b>	10	7.8	8.1	7.4	8.6	8.1	13	11	9.2	8.5	7.9	11
<b>Min</b>	4.7	6.3	4.4	3.1	6.0	6.6	6.4	4.0	4.6	4.2	5.2	5.4
<b>Ac-ft</b>	393	409	405	366	371	442	480	393	397	323	380	391

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	11.7	12.6	12.5	12.6	12.8	13.0	12.9	12.7	12.3	11.1	10.7	11.0
<b>Max</b>	16.2	19.7	17.1	17.9	17.5	18.1	18.1	19.0	19.0	30.3	17.7	18.8
<b>(WY)</b>	(1966)	(1943)	(1941)	(1942)	(1949)	(1949)	(1949)	(1969)	(1965)	(1965)	(1950)	(1951)
<b>Min</b>	3.05	3.15	5.96	5.95	6.15	7.19	6.32	5.38	5.44	5.18	5.05	4.56
<b>(WY)</b>	(2004)	(2004)	(2008)	(2009)	(2003)	(2009)	(2007)	(2007)	(2006)	(2001)	(2003)	(2003)

06824000 Rock Creek at Parks, Nebr.—Continued

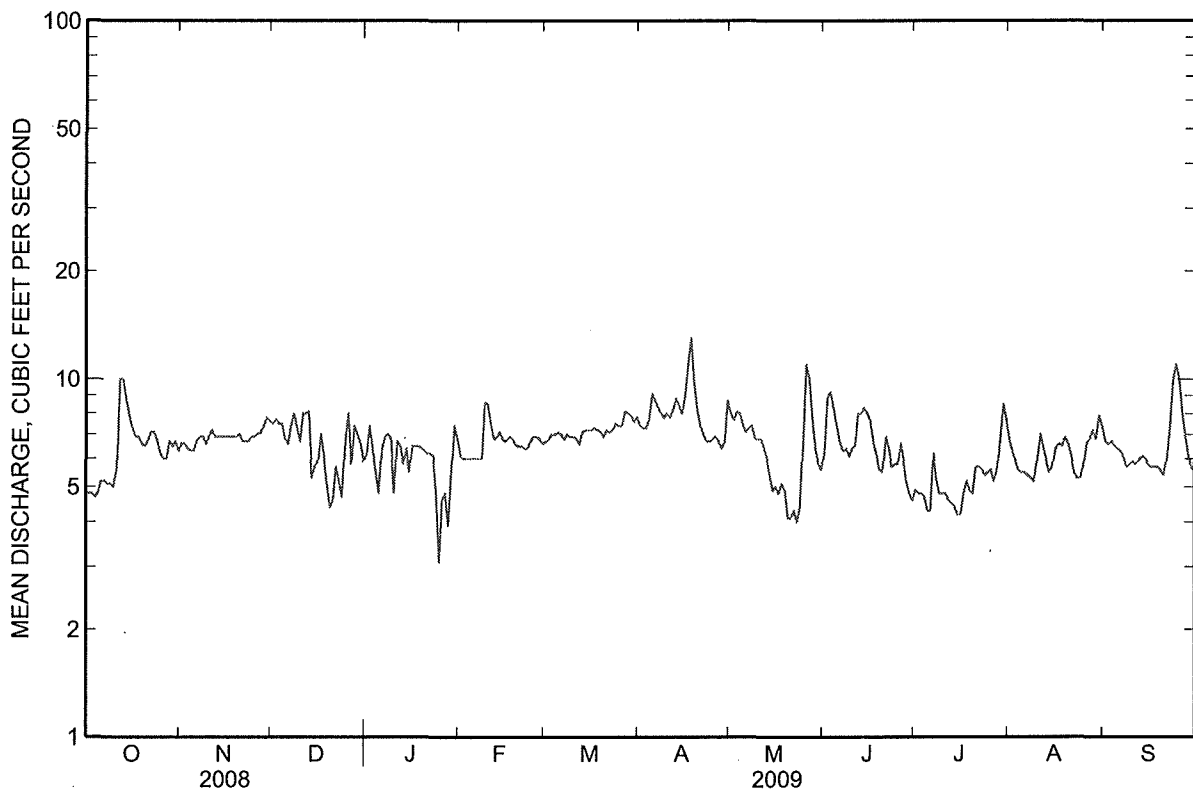
SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1941 - 2009	
Annual total	2,446.1		2,393.9			
Annual mean	6.68		6.56		12.1	
Highest annual mean					15.8	1949
Lowest annual mean					6.55	2008
Highest daily mean	15	Apr 11	13	Apr 18	111	Jul 6, 1965
Lowest daily mean	3.0	Jan 22	3.1	Jan 25	0.63	Oct 26, 2003
Annual seven-day minimum	3.5	Jan 19	4.4	May 18	0.64	Oct 23, 2003
Maximum peak flow			<sup>a</sup> 16	Apr 18	<sup>b</sup> 493	Jul 5, 1965
Maximum peak stage			<sup>c</sup> 2.32	Nov 12	6.00	Jul 5, 1965
Annual runoff (ac-ft)	4,850		4,750		8,790	
10 percent exceeds	8.0		8.0		16	
50 percent exceeds	6.8		6.6		12	
90 percent exceeds	5.0		4.8		7.5	

<sup>a</sup> Gage height, 1.77 ft.

<sup>b</sup> From rating curve extended above 40 ft<sup>3</sup>/s on basis of slope conveyance.

<sup>c</sup> Backwater.





Water-Data Report 2009

**06827500 South Fork Republican River near Benkelman, Nebr.**

Republican Basin  
South Fork Republican Subbasin

LOCATION.--Lat 40°00'37", long 101°32'31" referenced to North American Datum of 1983, in SE ¼ NW ¼ sec.31, T.1 N., R.37 W., Dundy County, NE, Hydrologic Unit 10250003, 1 mi downstream from Kansas-Nebraska State line, 2.5 mi southwest of Benkelman, and 3.4 mi upstream from mouth.

DRAINAGE AREA.--2,740 mi<sup>2</sup> of which 550 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1894 to September 1895, October 1902 to November 1906, October 1930 to September 1932, August 1937 to current year. Published as South Fork of Republican River at Benkelman prior to 1906 and as Republican River at Benkelman 1931-32. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1904-6, 1931. WSP 1390: 1940, 1945, 1947. WSP 1919: 1951-52, 1954-56. WSP 2119: Drainage area. WDR NE-97: 1995 (M).

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 2,989.91 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 10, 1947, non-recording gages at several sites within 3.5 mi of present site at various datums. Dec. 10, 1947 to Sept. 28, 1966, water-stage recorder 170 ft upstream at datum 3.00 ft higher; and Sept. 29, 1966 to Mar. 7, 1968, at site 300 ft upstream at datum 3.00 ft higher. Mar. 8, 1968 to May 29, 1991, at site 300 ft upstream at datum 1.0 ft higher. May 30, 1991 to Sept. 30, 1998, at present site at datum 1.0 ft higher.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Natural flow affected by irrigation development above station and, since July 6, 1950, by storage in Bonny Reservoir.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1923, 10.1 ft, May 31, 1935, from floodmark at site 0.26 mi downstream, at datum 2.00 ft higher, discharge 150,000 ft<sup>3</sup>/s, by slope-area measurement.

## 06827500 South Fork Republican River near Benkelman, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.9	8.0	e5.2	e4.9	e13	e9.3	9.2	17	e31	19	2.3	0.00
2	2.2	8.3	8.3	e6.7	e10	9.7	8.8	18	27	19	2.0	0.00
3	1.5	7.7	5.7	e5.5	e12	9.9	9.1	19	23	18	1.6	0.00
4	0.04	7.7	e5.7	e5.4	e11	10	9.3	19	21	15	1.1	0.00
5	0.00	7.2	e4.6	e4.3	e11	10	e7.8	18	20	13	0.86	0.00
6	0.00	6.4	e6.7	e4.4	12	9.9	e8.2	16	19	12	0.68	0.00
7	0.00	5.7	e7.8	e4.8	10	9.5	9.5	16	18	13	0.51	0.00
8	0.00	5.6	8.0	e5.8	10	9.5	9.7	17	20	9.7	0.22	0.00
9	0.00	6.0	e5.6	e6.0	13	9.5	9.5	20	19	8.4	0.00	0.00
10	0.00	6.1	e4.8	e4.0	13	e9.1	8.8	23	18	7.5	0.00	0.00
11	0.00	6.8	e6.6	e6.5	12	e8.6	8.5	27	17	7.3	0.00	0.00
12	0.52	8.3	e7.7	e7.8	e11	e8.6	8.6	30	20	7.0	0.00	0.00
13	11	9.5	e9.9	e7.0	e11	9.1	9.2	31	21	6.5	0.00	0.00
14	22	8.0	e4.4	e6.3	e10	9.5	9.3	31	23	5.7	0.00	0.00
15	27	e7.1	1.1	e5.1	e10	9.5	9.1	31	24	6.0	0.00	0.00
16	24	6.8	0.62	e7.4	e11	9.0	8.5	28	23	6.1	0.00	0.00
17	20	6.1	0.10	e10	e12	9.0	11	25	21	5.3	0.00	0.00
18	18	6.3	e4.2	e12	11	8.7	19	23	19	5.1	0.00	0.00
19	15	6.1	e6.7	e12	e11	8.6	26	21	16	4.8	0.00	0.00
20	13	5.1	e4.5	e13	e10	8.8	29	19	15	4.3	0.00	0.00
21	13	e5.2	e1.6	e12	e9.6	8.9	29	17	16	4.3	0.00	0.00
22	12	e5.9	1.3	e12	e9.7	9.5	27	24	17	3.9	0.00	0.00
23	13	e5.4	0.82	e9.0	e10	9.8	25	e98	18	3.6	0.00	0.00
24	13	e4.9	0.08	e7.8	11	8.6	23	42	19	3.4	0.00	0.00
25	13	e5.3	0.00	e6.9	11	8.5	21	29	20	8.0	0.00	0.00
26	11	e5.0	0.05	e6.6	10	8.4	21	37	20	6.3	0.00	0.00
27	9.4	5.1	0.45	e6.0	9.6	e8.0	19	e77	19	4.2	0.00	0.00
28	9.3	5.8	1.4	e6.6	e9.2	e8.5	18	e63	20	3.2	0.00	0.00
29	9.2	6.4	4.5	e7.2	---	9.9	19	e54	20	3.6	0.00	0.00
30	8.9	6.2	e3.9	e10	---	9.8	19	e48	19	3.4	0.00	0.00
31	8.0	---	e2.9	e13	---	e8.9	---	e31	---	3.1	0.00	---
<b>Total</b>	276.96	194.0	125.22	236.0	304.1	284.6	449.1	969	603	239.7	9.27	0.00
<b>Mean</b>	8.93	6.47	4.04	7.61	10.9	9.18	15.0	31.3	20.1	7.73	0.30	0.00
<b>Max</b>	27	9.5	9.9	13	13	10	29	98	31	19	2.3	0.00
<b>Min</b>	0.00	4.9	0.00	4.0	9.2	8.0	7.8	16	15	3.1	0.00	0.00
<b>Ac-ft</b>	549	385	248	468	603	565	891	1,920	1,200	475	18	0.00

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	14.6	19.3	18.2	20.5	34.9	45.8	50.5	63.3	63.9	50.4	30.1	21.2
<b>Max</b>	160	113	77.0	77.5	121	227	158	396	455	616	383	335
<b>(WY)</b>	(1966)	(1970)	(1943)	(1943)	(1949)	(1942)	(1958)	(1957)	(1948)	(1946)	(1958)	(1951)
<b>Min</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>(WY)</b>	(1940)	(1953)	(1953)	(1977)	(2003)	(2004)	(2004)	(2004)	(2002)	(1943)	(1940)	(1939)

06827500 South Fork Republican River near Benkelman, Nebr.—Continued

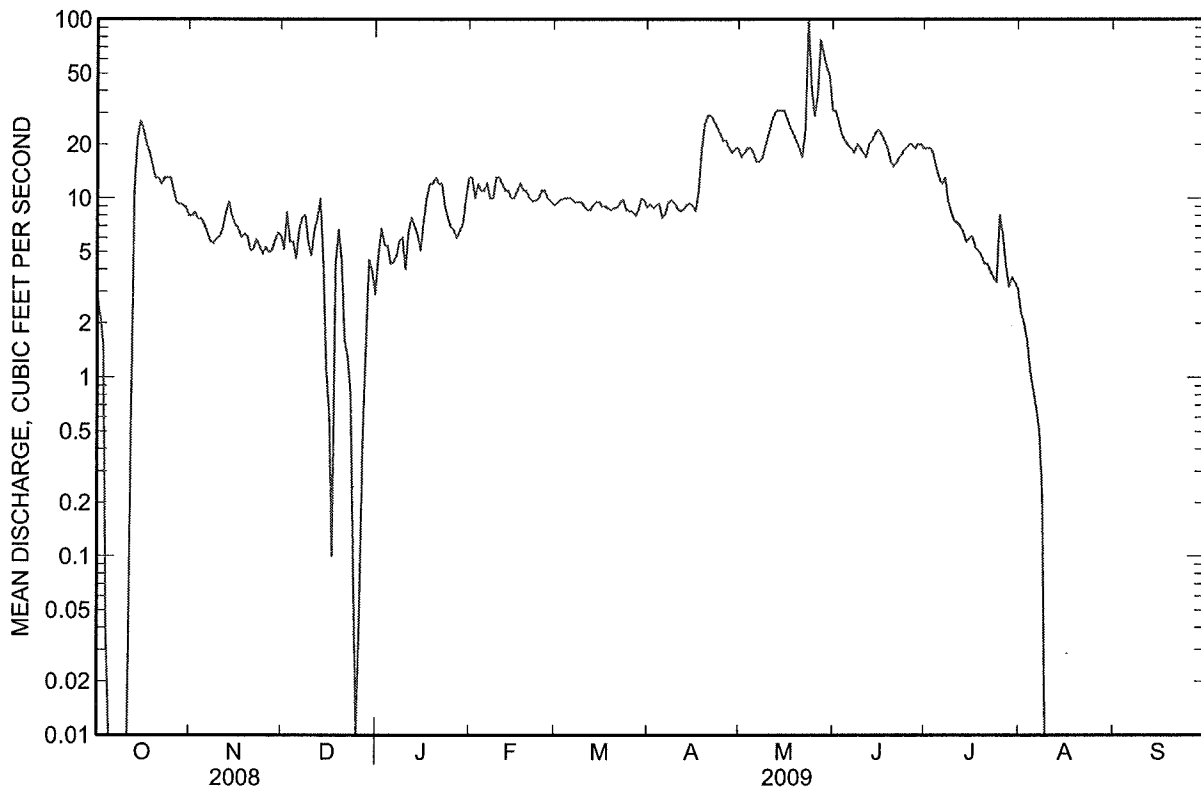
SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1938 - 2009	
Annual total	704.49		3,690.95			
Annual mean	1.92		10.1		36.5	
Highest annual mean					121	1951
Lowest annual mean					0.00	2004
Highest daily mean	27	Aug 12	<sup>a</sup> 98	May 23	6,220	Aug 16, 1958
Lowest daily mean	0.00	Jan 1	0.00	Oct 5	0.00	Jul 3, 1938
Annual seven-day minimum	0.00	Jan 1	0.00	Oct 5	0.00	Aug 1, 1938
Maximum peak flow			277	May 23	19,600	Aug 16, 1958
Maximum peak stage			<sup>b</sup> 4.33	May 23	<sup>c</sup> 8.70	Aug 16, 1958
Annual runoff (ac-ft)	1,400		7,320		26,450	
10 percent exceeds	6.8		21		79	
50 percent exceeds	0.00		8.5		15	
90 percent exceeds	0.00		0.00		0.00	

<sup>a</sup> Estimated.

<sup>b</sup> From floodmark.

<sup>c</sup> May have been higher during flood of June 24, 1945, site and datum then in use.





Water-Data Report 2009

**06828500 Republican River at Stratton, Nebr.**

Republican Basin  
Upper Republican Subbasin

LOCATION.--Lat 40°08'26", long 101°13'47" referenced to North American Datum of 1983, in NW ¼ SW ¼ sec.13, T.2 N., R.35 W., Hitchcock County, NE, Hydrologic Unit 10250004, on right bank at downstream side of county bridge, 0.5 mi south of Stratton, 0.2 mi downstream from Muddy Creek, 10 mi upstream from Trenton Dam, 19 mi downstream from South Fork Republican River, and at river mile 397.

DRAINAGE AREA.--8,200 mi<sup>2</sup> of which 4,510 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--July 1950 to current year.

REVISED RECORDS.--WDR NE-73: 1968-71(M), 1972. WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 2,775.49 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1967, water-stage recorder at site 0.3 mi downstream at present datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Natural flow affected by irrigation development above station and by storage in Bonny Reservoir (station 06826000).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1826 occurred May 31, 1935, discharge, about 200,000 ft<sup>3</sup> /s, based on slope-area measurement at Max, NE.

## 06828500 Republican River at Stratton, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.00	22	41	e40	e65	61	56	63	110	40	10	0.00
2	0.00	23	46	e42	e66	63	55	64	110	49	8.6	0.00
3	0.00	24	43	e44	e68	64	53	69	118	43	7.3	0.00
4	0.00	25	42	e36	e65	65	54	89	109	37	5.8	0.00
5	0.00	26	e36	e33	e76	65	56	107	96	30	4.3	0.00
6	0.00	27	e42	e36	87	64	57	92	84	26	3.0	0.00
7	0.00	27	51	e42	79	64	58	77	79	39	1.9	0.00
8	0.00	26	46	e42	75	64	59	75	101	35	0.86	0.00
9	0.00	24	45	e45	85	61	60	64	88	30	0.27	0.00
10	0.00	25	e37	e40	83	58	58	65	74	26	0.84	0.00
11	0.00	28	e42	e44	86	55	55	61	74	26	0.09	0.00
12	0.00	28	e43	e44	84	54	56	63	73	23	0.02	0.00
13	0.00	29	e43	e43	86	58	60	63	72	19	0.03	0.00
14	0.00	31	e38	e39	82	59	60	58	80	19	0.06	0.00
15	0.00	31	e22	e38	78	62	60	56	122	16	0.08	0.00
16	0.00	31	e30	e45	77	63	57	50	137	13	2.2	0.00
17	0.00	32	e35	e47	77	63	82	48	93	24	3.9	0.00
18	0.00	34	e36	e52	75	59	125	43	76	22	1.4	0.00
19	0.00	33	e39	e55	72	56	136	35	69	17	0.24	0.00
20	0.00	32	e38	e54	71	57	142	28	57	14	0.08	0.00
21	0.00	34	e27	e58	69	57	159	24	60	11	0.05	0.00
22	0.00	35	e36	e63	66	59	150	21	70	9.9	0.05	0.00
23	0.00	35	e38	e66	65	60	127	24	68	9.5	0.06	0.05
24	4.4	34	e34	e63	66	54	108	78	62	9.7	0.23	0.19
25	10	36	e38	e59	67	56	81	130	60	11	0.29	2.2
26	13	37	e40	e52	67	58	68	152	64	9.4	0.05	6.5
27	16	39	e41	e52	65	57	63	163	57	8.2	0.03	9.3
28	19	40	e37	e55	62	57	60	166	56	9.8	0.00	10
29	20	42	e40	e56	---	58	60	194	51	10	0.00	9.9
30	20	43	e40	e58	---	60	64	161	45	8.2	0.00	11
31	22	---	e35	e62	---	59	---	128	---	7.6	0.00	---
<b>Total</b>	124.40	933	1,201	1,505	2,064	1,850	2,339	2,511	2,415	652.3	51.73	49.14
<b>Mean</b>	4.01	31.1	38.7	48.5	73.7	59.7	78.0	81.0	80.5	21.0	1.67	1.64
<b>Max</b>	22	43	51	66	87	65	159	194	137	49	10	11
<b>Min</b>	0.00	22	22	33	62	54	53	21	45	7.6	0.00	0.00
<b>Ac-ft</b>	247	1,850	2,380	2,990	4,090	3,670	4,640	4,980	4,790	1,290	103	97

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	41.2	77.2	79.3	89.9	128	161	152	152	124	74.7	55.9	44.5
<b>Max</b>	285	218	157	159	225	788	388	766	572	759	479	1,005
<b>(WY)</b>	(1966)	(1970)	(1966)	(1974)	(1963)	(1960)	(1980)	(1957)	(1951)	(1962)	(1950)	(1951)
<b>Min</b>	0.00	0.00	0.00	11.5	22.3	42.0	36.7	5.12	0.00	0.00	0.00	0.00
<b>(WY)</b>	(1977)	(2003)	(2004)	(2005)	(2003)	(2005)	(2004)	(2006)	(2000)	(1954)	(1952)	(1952)

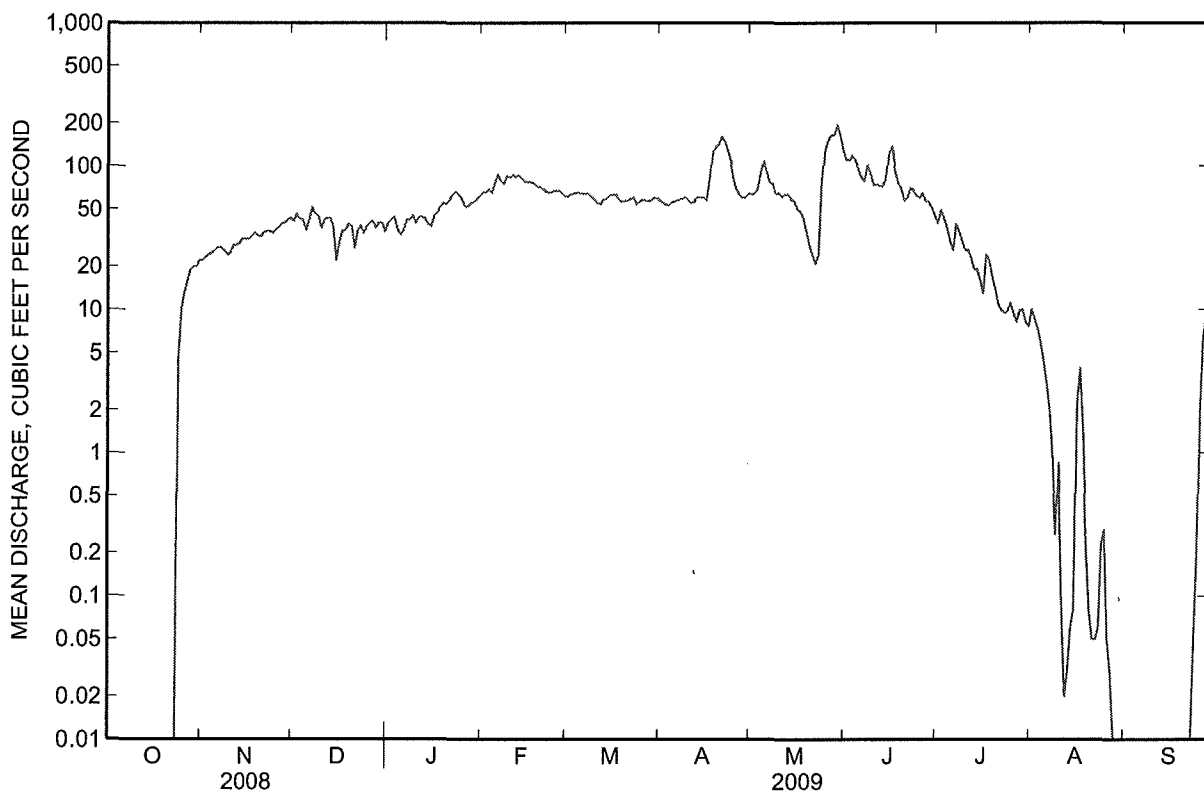
06828500 Republican River at Stratton, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1950 - 2009	
Annual total	8,945.45		15,695.57			
Annual mean	24.4		43.0		97.4	
Highest annual mean					304	1951
Lowest annual mean					12.1	2004
Highest daily mean	105	May 24	194	May 29	8,180	Aug 1, 1962
Lowest daily mean	0.00	Jul 14	0.00	Oct 1	0.00	Jun 18, 1952
Annual seven-day minimum	0.00	Jul 14	0.00	Oct 1	0.00	Jun 18, 1952
Maximum peak flow			<sup>a</sup> 201	May 29	26,800	Jul 31, 1962
Maximum peak stage			<sup>b</sup> 7.70	Jan 24	9.34	Jul 31, 1962
Annual runoff (ac-ft)	17,740		31,130		70,540	
10 percent exceeds	60		81		201	
50 percent exceeds	20		42		69	
90 percent exceeds	0.00		0.00		0.00	

<sup>a</sup> Gage height, 7.45 ft.

<sup>b</sup> Backwater from ice.





Water-Data Report 2009

**06834000 Frenchman Creek at Palisade, Nebr.**

Republican Basin  
Frenchman Subbasin

LOCATION.--Lat 40°21'06", long 101°07'25" referenced to North American Datum of 1983, in SW ¼ SE ¼ sec.36, T.5 N., R.34 W., Hayes County, NE, Hydrologic Unit 10250005, on right bank at upstream side of bridge on U.S. Highway 6, 0.7 mi west of Palisade, 1.5 mi upstream from Stinking Water Creek, and at mile 30.2.

DRAINAGE AREA.--1,300 mi<sup>2</sup> of which 190 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1894 to October 1896, June 1950 to current year. Published as Frenchman River at Palisade, October 1894 to October 1896 and October 1965 to September 1972.

REVISED RECORDS.--WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 2,743.49 ft above sea level. October 1894 to October 1896, non-recording gage at railroad bridge 0.4 mi downstream at different datum; June 1950 to Feb. 7, 1977, recording gage at site 2,000 ft upstream at datum 4.0 ft higher.

COOPERATION.--Records provided by Nebraska Department of Natural Resources and reviewed by the U.S. Geological Survey.

REMARKS.--Records good except for estimated days, which are poor. Natural flow affected by irrigation development above station, and since Oct. 23, 1950, by storage in Enders Reservoir (station 06832000).

## 06834000 Frenchman Creek at Palisade, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	14	21	23	e18	e25	27	26	64	25	24	27	15
2	14	21	24	e19	28	27	25	41	25	26	26	15
3	14	22	23	e18	28	27	25	36	27	26	25	15
4	15	23	23	e17	28	28	26	35	27	27	25	15
5	15	23	e21	e18	28	28	25	34	26	25	24	15
6	16	23	e19	e18	28	27	25	33	25	25	23	15
7	15	24	e20	e18	28	27	25	32	25	25	22	15
8	15	23	23	e19	28	26	25	32	25	24	21	15
9	15	22	23	e22	30	27	25	30	25	24	20	15
10	15	22	e18	e19	30	26	25	30	25	24	20	15
11	16	23	e19	e20	29	26	25	30	26	31	21	16
12	35	23	23	e19	28	26	25	29	28	30	21	16
13	30	23	23	e17	28	27	26	29	28	25	19	16
14	24	23	e19	e19	28	26	26	28	27	24	19	16
15	21	22	e15	e17	28	26	26	28	53	23	20	16
16	21	22	e17	e17	28	26	25	27	67	22	19	16
17	21	22	e19	e21	28	26	28	27	38	52	20	16
18	20	22	e18	25	28	26	31	26	33	306	19	17
19	19	22	e21	25	28	26	30	26	31	75	18	17
20	19	22	e19	25	28	26	29	25	30	53	17	16
21	19	21	e17	25	27	26	28	24	29	48	17	17
22	20	22	e20	25	27	26	27	24	29	44	17	18
23	21	22	e20	e25	27	26	26	25	28	40	16	22
24	21	22	e20	e21	28	26	26	26	26	38	16	25
25	21	23	e22	e20	28	26	26	28	26	38	16	24
26	21	24	e23	e19	28	26	25	30	29	36	16	23
27	20	24	e20	e20	27	26	26	32	27	34	16	22
28	20	24	e19	e20	27	26	25	30	26	33	16	21
29	21	24	e19	e19	---	26	26	28	25	33	15	21
30	21	24	e19	e23	---	26	95	26	24	32	15	21
31	21	---	e18	e24	---	26	---	25	---	29	15	---
<b>Total</b>	600	678	627	632	781	817	853	940	885	1,296	601	526
<b>Mean</b>	19.4	22.6	20.2	20.4	27.9	26.4	28.4	30.3	29.5	41.8	19.4	17.5
<b>Max</b>	35	24	24	25	30	28	95	64	67	306	27	25
<b>Min</b>	14	21	15	17	25	26	25	24	24	22	15	15
<b>Ac-ft</b>	1,190	1,340	1,240	1,250	1,550	1,620	1,690	1,860	1,760	2,570	1,190	1,040

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	36.0	33.3	33.4	35.2	40.1	44.3	43.7	48.6	64.0	161	147	59.5
<b>Max</b>	120	88.9	97.4	102	147	247	198	151	270	340	367	232
<b>(WY)</b>	(1963)	(1959)	(1959)	(1953)	(1952)	(1960)	(1960)	(1957)	(1967)	(1968)	(1962)	(1962)
<b>Min</b>	10.2	16.9	17.1	19.0	21.8	21.5	21.2	16.2	8.61	8.26	3.41	2.25
<b>(WY)</b>	(2003)	(2003)	(2006)	(2007)	(2006)	(2003)	(2005)	(2006)	(2002)	(2006)	(2002)	(2002)



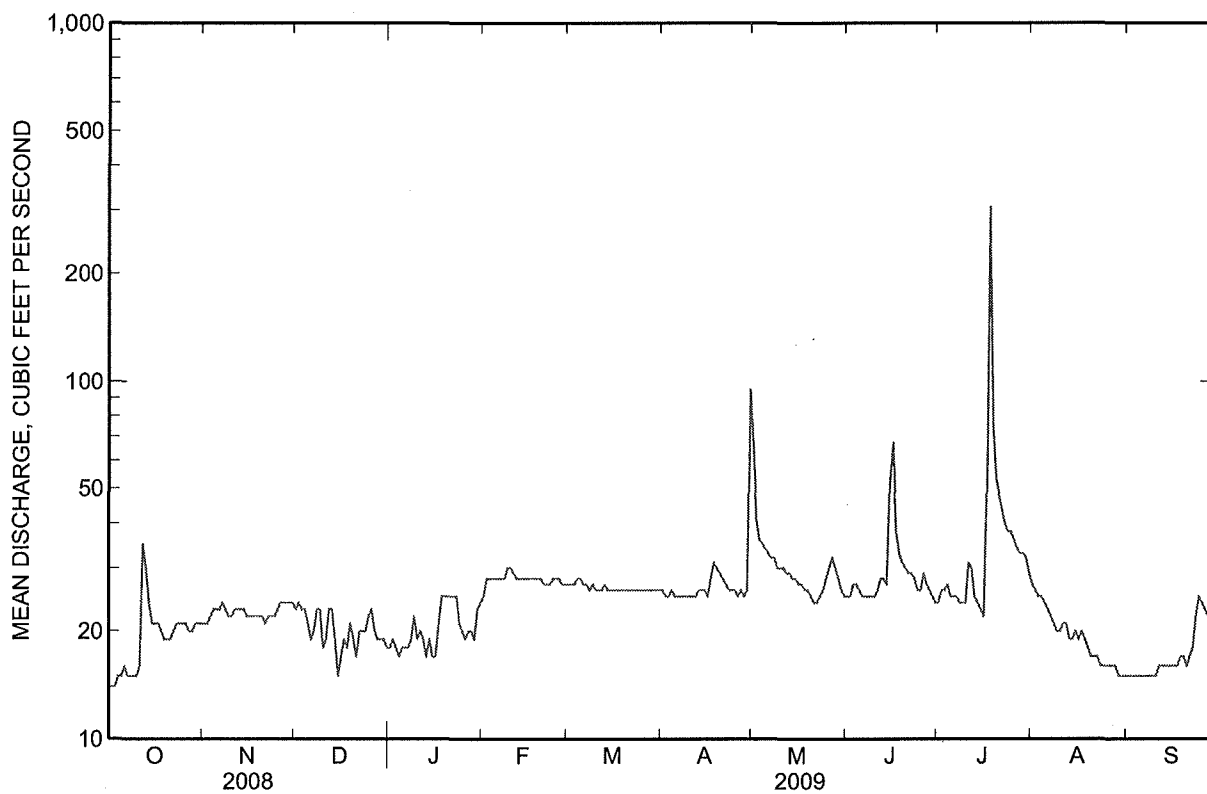
06834000 Frenchman Creek at Palisade, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1950 - 2009 <sup>a</sup>	
Annual total	8,125.7		9,236			
Annual mean	22.2		25.3		62.6	
Highest annual mean					115	1960
Lowest annual mean					15.8	2006
Highest daily mean	188	May 24	306	Jul 18	2,090	Jun 17, 1956
Lowest daily mean	7.4	Aug 4	14	Oct 1	0.01	Aug 24, 2003
Annual seven-day minimum	9.0	Jul 31	15	Oct 1	0.03	Aug 21, 2003
Maximum peak flow			453	Jul 18	5,560	Jun 17, 1956
Maximum peak stage			7.76	Jul 18	<sup>b</sup> 8.79	Jun 17, 1956
Annual runoff (ac-ft)	16,120		18,320		45,370	
10 percent exceeds	27		30		146	
50 percent exceeds	22		25		33	
90 percent exceeds	14		16		20	

<sup>a</sup> Since beginning of storage in Enders Reservoir.

<sup>b</sup> Site and datum then in use.





Water-Data Report 2009

**06835500 Frenchman Creek at Culbertson, Nebr.**

Republican Basin  
Frenchman Subbasin

LOCATION.--Lat 40°14'05", long 100°52'40" referenced to North American Datum of 1927, in SW ¼ SE ¼ sec.12, T.3 N., R.32 W., Hitchcock County, NE, Hydrologic Unit 10250005, on right bank 8 ft upstream from bridge on U.S. Highways 6 and 34, 2 mi west of Culbertson, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--2,990 mi<sup>2</sup> of which 1,400 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--June 1913 to September 1915 (gage heights and discharge measurements only), October 1930 to current year. Published as Frenchman River at Culbertson October 1965 to September 1972. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1390: 1931, 1933, 1934(M), 1938(M). WDR NE-84-1: 1979, 1982(M). WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,583.44 ft above sea level. See WSP 1919 for history of changes prior to Nov 2, 1950. Data collection platform at station.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow affected by irrigation development above station and, since Oct 23, 1950, by storage in Enders Reservoir (06832000). Principal diversion is by Culbertson Canal, 20,800 acres.

EXTREMES FOR PERIOD OF RECORD.--(BEFORE REGULATION BY ENDERS RESERVOIR) Maximum discharge, 15,000 ft<sup>3</sup>/s, estimated, May 31, 1935, stage 14.8 ft, from floodmarks, at present site and datum; minimum daily discharge, 7 ft<sup>3</sup>/s, Aug 13, 14, and 26, 1936.

## 06835500 Frenchman Creek at Culbertson, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	21	39	42	e44	e58	51	48	69	26	21	19	6.9
2	21	39	42	e44	56	51	48	61	25	22	17	7.1
3	22	39	42	e36	55	51	48	52	25	22	16	7.6
4	22	40	42	e34	55	52	49	45	26	22	16	8.0
5	22	40	e41	e36	54	51	48	42	26	22	15	8.6
6	23	40	44	e39	54	51	48	42	23	20	14	7.6
7	23	40	45	e42	54	51	48	41	23	20	12	6.9
8	23	40	44	e52	54	51	49	39	23	19	11	7.0
9	23	40	44	55	55	50	49	36	23	19	9.9	10
10	23	40	e37	e50	56	50	49	35	22	19	9.1	29
11	24	41	e44	e52	56	e46	48	35	22	19	8.6	18
12	28	41	e45	e52	56	e45	49	e34	23	20	8.7	15
13	49	41	45	e49	56	e47	49	e31	23	19	9.2	15
14	45	41	e38	e51	55	49	49	e29	24	17	9.1	15
15	40	41	e31	e49	54	49	49	28	31	17	8.9	15
16	38	41	e30	e49	54	49	50	28	54	16	7.7	14
17	37	41	e32	e53	54	49	51	27	84	25	7.4	14
18	36	41	e38	e56	53	48	54	27	51	80	7.6	15
19	35	40	e37	57	53	48	55	26	39	114	7.7	15
20	35	40	e36	57	53	48	56	25	33	43	7.4	16
21	35	41	e33	57	52	48	56	25	29	33	7.2	16
22	37	41	e35	57	52	48	39	25	26	27	7.3	17
23	37	41	e36	e56	52	49	34	22	25	25	7.9	21
24	38	41	e35	e50	52	48	30	18	23	23	8.5	24
25	38	41	e40	e47	53	48	28	20	22	22	8.3	27
26	38	41	e42	e41	52	48	27	27	23	21	7.2	26
27	37	42	e41	e39	52	48	26	33	22	20	6.9	26
28	39	42	e42	e39	51	48	29	31	25	20	6.9	25
29	38	42	e42	e45	---	48	32	28	25	19	6.9	25
30	38	42	e42	56	---	48	41	26	23	19	7.3	25
31	38	---	e43	57	---	48	---	25	---	19	7.1	---
<b>Total</b>	1,003	1,219	1,230	1,501	1,511	1,516	1,336	1,032	869	824	302.8	482.7
<b>Mean</b>	32.4	40.6	39.7	48.4	54.0	48.9	44.5	33.3	29.0	26.6	9.77	16.1
<b>Max</b>	49	42	45	57	58	52	56	69	84	114	19	29
<b>Min</b>	21	39	30	34	51	45	26	18	22	16	6.9	6.9
<b>Ac-ft</b>	1,990	2,420	2,440	2,980	3,000	3,010	2,650	2,050	1,720	1,630	601	957

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2009, BY WATER YEAR (WY)**

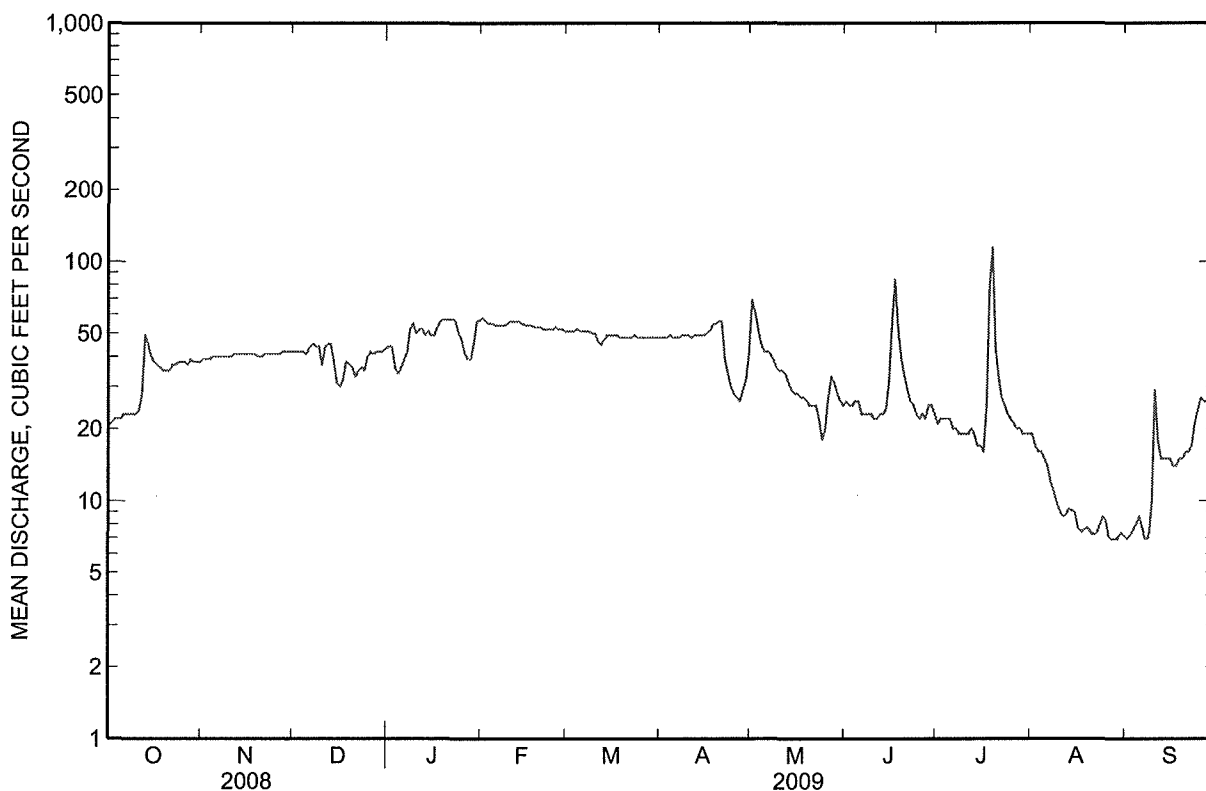
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	63.6	74.7	74.1	75.4	91.8	103	73.1	61.6	71.9	44.8	34.5	50.0
<b>Max</b>	172	146	162	182	210	543	290	222	351	269	258	245
<b>(WY)</b>	(1963)	(1963)	(1959)	(1953)	(1952)	(1960)	(1960)	(1952)	(1967)	(1962)	(1962)	(1951)
<b>Min</b>	0.00	5.13	16.9	21.9	40.5	31.8	16.7	12.4	4.57	0.32	0.15	0.00
<b>(WY)</b>	(2003)	(2003)	(2003)	(2004)	(2004)	(2003)	(2004)	(2002)	(2000)	(2002)	(2003)	(2002)

06835500 Frenchman Creek at Culbertson, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1951 - 2009 <sup>a</sup>	
Annual total	16,725		12,826.5			
Annual mean	45.7		35.1		68.0	
Highest annual mean					165	1960
Lowest annual mean					17.4	2003
Highest daily mean	599	Aug 9	114	Jul 19	3,060	Jun 18, 1956
Lowest daily mean	12	Aug 3	6.9	Aug 27	0.00	Aug 7, 1980
Annual seven-day minimum	13	Aug 1	7.0	Aug 27	0.00	Aug 18, 2000
Maximum peak flow			150	Jul 19	5,260	Jun 17, 1951
Maximum peak stage			5.16	Jul 19	10.43	Jun 17, 1951
Annual runoff (ac-ft)	33,170		25,440		49,270	
10 percent exceeds	59		53		124	
50 percent exceeds	44		38		56	
90 percent exceeds	21		14		14	

<sup>a</sup> Since beginning of storage in Enders Reservoir.





Water-Data Report 2009

**06836500 Driftwood Creek near McCook, Nebr.**

Republican Basin  
Upper Republican Subbasin

LOCATION.--Lat 40°08'45", long 100°40'22" referenced to North American Datum of 1927, in SW ¼ SE ¼ sec.11, T.2 N., R.30 W., Red Willow County, NE, Hydrologic Unit 10250004, on right bank downstream from county road bridge, 5.8 mi upstream from mouth, and 3.5 mi southwest of McCook.

DRAINAGE AREA.--361 mi<sup>2</sup> of which 10 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--March 1946 to current year.

REVISED RECORDS.--WSP 1210: 1950. WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 2,502.78 ft above NGVD of 1929. Prior to October 12, 1962, at site 1.5 mi downstream in old channel at datum 9.00 ft lower; October 12, 1962 to April 11, 1963, at site 1.8 mi downstream at datum 12.75 ft lower; April 12, 1963 to April 22, 1982, at site 1.3 mi downstream at datum 9.00 ft lower; and April 22, 1982 to May 29, 1992, at site 3.2 mi downstream at datum 17.55 ft lower.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Natural flow affected by returns from Meeker-Driftwood Canal and by irrigation development above station.

## 06836500 Driftwood Creek near McCook, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.33	0.48	0.56	0.65	0.98	e1.4	1.4	1.6	1.3	6.1	2.1	0.72
2	0.32	0.56	0.58	0.67	0.94	1.5	1.5	1.6	1.9	3.0	1.9	0.67
3	0.34	0.62	0.57	0.65	0.96	1.6	1.5	1.7	2.3	2.1	1.8	0.67
4	0.32	0.61	0.56	e0.56	0.96	1.6	1.6	1.7	1.4	2.0	2.0	0.66
5	0.33	0.63	0.56	e0.59	0.99	1.6	1.7	1.6	1.2	2.0	2.1	0.63
6	0.37	0.64	0.59	e0.76	1.0	1.5	1.6	1.6	1.3	2.2	2.1	0.67
7	0.37	0.66	0.61	e0.90	0.99	1.6	1.7	1.5	1.1	2.4	2.7	0.66
8	0.37	0.65	0.61	0.95	0.97	1.6	1.8	1.6	1.1	2.5	2.5	0.64
9	0.32	0.61	0.60	0.92	1.1	1.6	1.8	1.6	1.1	2.7	1.9	0.85
10	0.29	0.65	0.57	0.82	1.2	e1.5	1.7	1.5	1.7	4.2	4.0	0.92
11	0.28	0.67	0.62	0.80	1.1	e1.4	1.6	1.4	1.7	2.8	4.2	0.81
12	0.31	0.66	0.61	0.79	1.1	e1.5	1.8	1.4	10	2.4	3.6	0.80
13	0.49	0.65	0.64	0.82	e1.2	1.7	1.8	1.4	4.3	2.2	3.7	0.78
14	0.51	0.65	0.60	0.83	e1.3	1.6	1.8	1.3	1.4	2.0	4.1	0.77
15	0.47	0.61	0.59	0.77	1.3	1.7	1.8	1.3	52	1.9	5.4	0.70
16	0.35	0.60	0.57	0.88	1.3	1.7	1.8	1.1	16	1.8	5.4	0.70
17	0.36	0.57	e0.57	0.89	1.4	1.7	2.1	1.1	4.5	3.4	7.9	0.73
18	0.30	0.58	e0.60	0.88	e1.4	1.8	3.0	1.0	3.3	2.6	4.9	0.72
19	0.26	0.58	e0.59	0.83	e1.3	1.8	2.5	1.0	2.6	30	3.9	0.74
20	0.29	0.58	e0.57	0.82	e1.4	1.8	2.2	0.94	2.1	26	3.4	0.78
21	0.34	0.56	e0.54	0.80	1.4	1.8	2.1	0.77	2.0	7.2	2.1	0.86
22	0.60	0.60	e0.54	0.80	e1.3	1.5	1.8	0.71	1.9	3.5	2.7	0.98
23	0.77	0.60	e0.56	0.77	e1.4	1.5	1.7	0.76	1.9	3.3	2.8	1.4
24	0.78	0.61	e0.55	0.78	1.4	1.3	1.5	0.89	1.8	3.8	2.4	1.8
25	0.59	0.60	e0.57	0.83	1.4	1.4	1.4	1.2	1.7	3.1	4.1	1.8
26	0.50	0.61	e1.3	0.84	1.5	1.5	1.4	27	1.8	2.4	3.0	1.3
27	0.48	0.61	e0.77	0.89	e1.3	1.4	1.4	23	1.8	2.9	3.3	1.3
28	0.43	0.64	0.71	0.87	e1.3	1.4	1.4	35	1.7	3.7	4.1	1.3
29	0.42	0.64	0.67	0.88	---	1.4	1.4	7.7	1.8	8.6	2.1	1.2
30	0.46	0.62	0.69	0.93	---	1.5	1.8	2.6	1.8	9.4	1.3	1.3
31	0.47	---	0.62	0.96	---	1.5	---	1.8	---	4.2	0.94	---
<b>Total</b>	12.82	18.35	19.29	25.13	33.89	48.4	52.6	129.37	130.5	156.4	98.44	27.86
<b>Mean</b>	0.41	0.61	0.62	0.81	1.21	1.56	1.75	4.17	4.35	5.05	3.18	0.93
<b>Max</b>	0.78	0.67	1.3	0.96	1.5	1.8	3.0	35	52	30	7.9	1.8
<b>Min</b>	0.26	0.48	0.54	0.56	0.94	1.3	1.4	0.71	1.1	1.8	0.94	0.63
<b>Ac-ft</b>	25	36	38	50	67	96	104	257	259	310	195	55

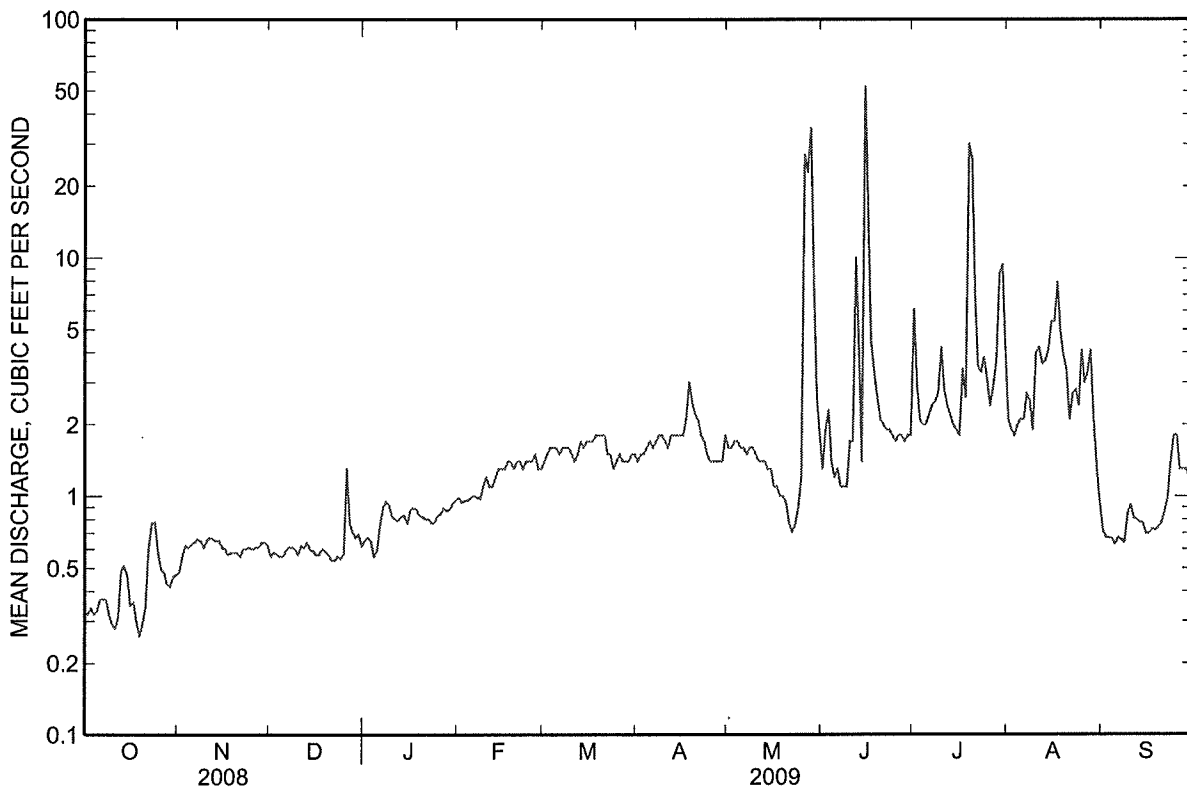
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	6.31	3.38	3.31	3.29	5.17	7.05	4.74	9.16	15.6	17.8	14.8	11.7
<b>Max</b>	137	7.71	7.44	7.96	31.4	209	50.3	112	85.8	100	156	302
<b>(WY)</b>	(1947)	(1998)	(1974)	(1974)	(1960)	(1960)	(2007)	(1957)	(1947)	(1956)	(1950)	(1951)
<b>Min</b>	0.07	0.08	0.08	0.05	0.05	0.04	0.20	0.19	0.23	0.05	0.05	0.04
<b>(WY)</b>	(1956)	(1956)	(1955)	(1955)	(1956)	(1956)	(1948)	(1956)	(1954)	(1955)	(1946)	(1953)

06836500 Driftwood Creek near McCook, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2008	Water Year 2009	Water Years 1946 - 2009	
Annual total	1,274.71	753.05		
Annual mean	3.48	2.06	8.54	
Highest annual mean			35.0	1951
Lowest annual mean			0.93	2006
Highest daily mean	607 May 24	52 Jun 15	3,950	Aug 7, 1950
Lowest daily mean	0.25 Aug 31	0.26 Oct 19	0.00	Apr 25, 1946
Annual seven-day minimum	0.31 Aug 27	0.33 Oct 6	0.00	Jun 12, 1946
Maximum peak flow		118 Jun 15	4,740	Aug 7, 1950
Maximum peak stage		7.72 Jun 15	25.43	Aug 7, 1950
Annual runoff (ac-ft)	2,530	1,490	6,190	
10 percent exceeds	1.8	3.3	10	
50 percent exceeds	0.65	1.3	4.3	
90 percent exceeds	0.34	0.56	0.30	





Water-Data Report 2009

**06837000 Republican River at McCook, Nebr.**

Republican Basin  
Upper Republican Subbasin

LOCATION.--Lat 40°11'16", long 100°37'07" referenced to North American Datum of 1983, in SW ¼ NE ¼ sec.32, T.3 N., R.29 W., Red Willow County, NE, Hydrologic Unit 10250004, on left bank at downstream side of bridge on U.S. Highway 83 at south edge of McCook, 2.5 mi downstream from Driftwood Creek, 10.5 mi upstream from Red Willow Creek, and at mile 348.

DRAINAGE AREA.--12,240 mi<sup>2</sup> of which 6,020 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1930 to June 1932, October 1954 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 2,456.37 ft above sea level. October 1930 to June 1932, non-recording gage on former highway bridge 300 ft upstream at different datum; and October 1954 to Mar. 13, 1959, on highway bridge 25 ft upstream at present datum. Mar. 13, 1959 to Mar. 29, 1988, at present site and datum. Mar. 29, 1988 to Oct. 31, 1989, 200 ft downstream at present datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow affected by surface water and groundwater irrigation development above station and by storage in Bonny Reservoir, Enders Reservoir (station 06832000), and Swanson Reservoir (station 06829000).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1826 occurred May 31, 1935, discharge, about 245,000 ft<sup>3</sup>/s.



## 06837000 Republican River at McCook, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	15	32	40	e41	56	52	52	57	58	42	34	14
2	16	32	40	e42	56	53	51	72	63	57	32	14
3	16	32	39	e41	55	54	52	67	58	47	30	13
4	16	33	39	e35	54	55	54	62	56	44	28	12
5	16	33	36	e33	54	55	54	57	53	41	26	12
6	18	34	40	e34	55	54	52	54	50	40	26	11
7	17	34	42	e36	55	54	52	51	48	38	24	11
8	18	34	43	e38	54	54	53	51	47	36	23	9.8
9	18	34	41	e43	59	54	53	47	46	35	23	9.6
10	18	35	39	e42	59	53	53	46	45	37	21	13
11	20	37	41	e44	58	50	53	45	44	38	24	19
12	21	37	43	e46	57	50	55	44	52	36	21	17
13	28	37	44	e45	58	50	56	41	53	34	19	15
14	36	37	41	e45	58	52	56	38	47	32	20	14
15	36	37	e35	e42	57	53	56	37	78	29	26	14
16	32	37	e30	e44	57	52	56	35	116	29	24	13
17	29	37	e32	e47	59	52	69	34	84	33	23	13
18	29	37	e37	60	57	52	86	33	101	46	27	14
19	28	38	e38	67	55	52	74	32	79	70	25	14
20	28	37	e37	72	56	52	72	30	70	147	22	14
21	29	37	e33	74	54	53	72	29	69	75	19	15
22	36	38	e34	70	54	54	67	29	62	52	17	16
23	35	38	e36	62	54	55	54	28	56	44	17	21
24	32	38	e37	e53	55	52	48	34	52	41	17	26
25	32	38	e40	e46	56	51	43	34	48	38	25	27
26	31	38	e42	e41	56	52	41	150	53	35	25	27
27	31	39	e42	e38	54	51	39	204	48	33	21	26
28	32	40	e42	e35	52	51	38	122	46	39	20	25
29	32	40	e42	e39	---	52	40	90	47	43	19	25
30	e32	40	e43	51	---	53	49	71	43	46	17	25
31	32	---	e42	56	---	52	---	63	---	42	15	---
<b>Total</b>	809	1,090	1,210	1,462	1,564	1,629	1,650	1,787	1,772	1,399	710	499.4
<b>Mean</b>	26.1	36.3	39.0	47.2	55.9	52.5	55.0	57.6	59.1	45.1	22.9	16.6
<b>Max</b>	36	40	44	74	59	55	86	204	116	147	34	27
<b>Min</b>	15	32	30	33	52	50	38	28	43	29	15	9.6
<b>Ac-ft</b>	1,600	2,160	2,400	2,900	3,100	3,230	3,270	3,540	3,510	2,770	1,410	991

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	84.6	97.1	94.9	99.1	134	158	145	154	168	183	149	83.6
<b>Max</b>	466	341	321	269	398	901	577	1,022	1,070	1,142	970	286
<b>(WY)</b>	(1966)	(1966)	(1959)	(1959)	(1958)	(1960)	(1958)	(1957)	(1962)	(1962)	(1962)	(1962)
<b>Min</b>	0.04	0.03	0.28	9.17	36.6	33.8	21.8	14.8	6.41	1.77	0.48	0.17
<b>(WY)</b>	(2004)	(2004)	(2003)	(2003)	(2003)	(2003)	(2004)	(2004)	(2002)	(2002)	(2006)	(2003)

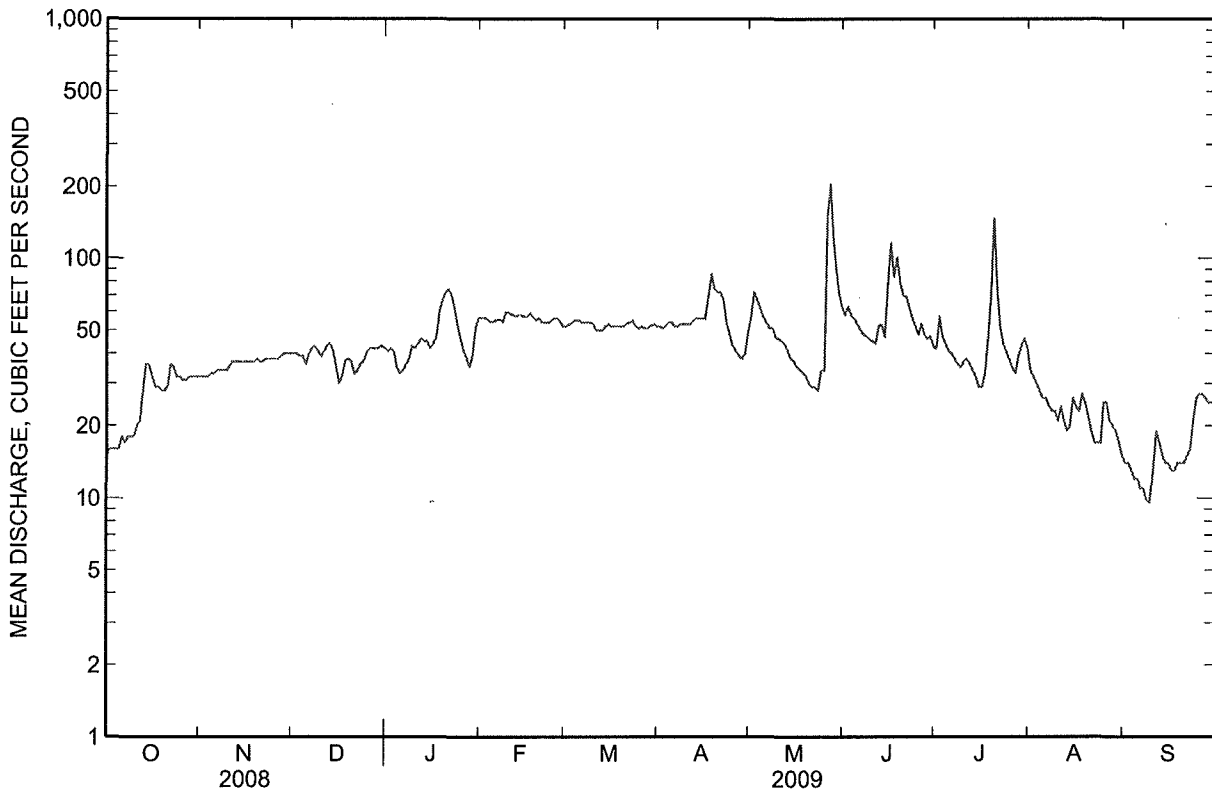
06837000 Republican River at McCook, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1955 - 2009	
Annual total	20,754.8		15,581.4			
Annual mean	56.7		42.7		129	
Highest annual mean					383	1962
Lowest annual mean					15.0	2003
Highest daily mean	1,080	Aug 10	204	May 27	5,020	Mar 21, 1960
Lowest daily mean	9.3	Aug 5	9.6	Sep 9	0.00	Sep 24, 2000
Annual seven-day minimum	12	Aug 2	11	Sep 3	0.00	Aug 29, 2001
Maximum peak flow			261	May 26	<sup>a</sup> 5,890	Mar 21, 1960
Maximum peak stage			5.58	May 26	<sup>b</sup> 9.76	Apr 24, 2007
Annual runoff (ac-ft)	41,170		30,910		93,570	
10 percent exceeds	77		58		230	
50 percent exceeds	42		41		96	
90 percent exceeds	18		19		32	

<sup>a</sup> Gage height, 9.14 ft.

<sup>b</sup> Discharge, 3,250 ft<sup>3</sup>/s.





Water-Data Report 2009

**06838000 Red Willow Creek near Red Willow, Nebr.**

Republican Basin  
Red Willow Subbasin

LOCATION.--Lat 40°14'05", long 100°30'03" referenced to North American Datum of 1983, in NE ¼ NE ¼ sec.17, T.3 N., R.28 W., Red Willow County, NE, Hydrologic Unit 10250007, on left bank near downstream side of bridge on U.S. Highways 6 and 34, 0.8 mi north of Red Willow and 2.1 mi upstream from mouth.

DRAINAGE AREA.--820.00 mi<sup>2</sup> of which 415 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--September 1939 to current year.

REVISED RECORDS.--WSP 1510: 1945(M). WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 2,398.64 ft above sea level. Prior to May 26, 1945, non-recording gage at bridge 1.2 mi upstream at datum 11.16 ft higher; May 26, 1945 to August 2, 1974, water-stage recorder at left downstream side of bridge, present datum; August 3, 1974 to June 27, 1980, on right bank at downstream side of bridge, present datum; and June 28, 1980 to May 19, 1992, at left downstream side of bridge, present datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Natural flow affected by irrigation development above station, since September 5, 1961 by storage in Hugh Butler Lake (06837390); and since June 1963 by Red Willow Canal, which diverts 4.5 mi above station for irrigation of about 4,150 acres.

EXTREMES FOR PERIOD OF RECORD.--(BEFORE REGULATION BY HUGH BUTLER LAKE) Maximum discharge, 30,000 ft<sup>3</sup>/s, June 22, 1947, from rating curve extended above 6,800 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow, gage height, 18.36 ft; minimum daily discharge, 2.0 ft<sup>3</sup>/s, July 29-31, 1954, and September 10, 1961.

## 06838000 Red Willow Creek near Red Willow, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	8.5	8.8	7.9	8.3	8.9	e7.4	8.4	9.9	9.1	0.18	1.0	10
2	8.3	8.8	8.1	8.2	8.6	e8.3	8.5	9.7	9.3	0.35	0.56	8.7
3	8.5	8.9	8.0	8.2	8.7	9.1	8.6	9.8	9.2	0.26	0.57	8.8
4	8.3	8.9	7.7	6.5	8.7	9.1	8.7	9.9	9.1	0.28	2.5	8.5
5	8.4	9.0	e7.3	e6.6	8.8	9.2	8.9	9.8	9.1	0.25	11	8.3
6	8.8	8.8	8.2	e8.6	8.9	9.2	8.4	9.8	9.1	0.22	18	8.0
7	9.0	8.8	8.1	10	9.1	9.1	8.4	9.8	9.1	0.20	25	7.8
8	8.7	8.9	8.0	8.3	9.0	9.2	8.6	9.8	9.2	0.21	25	7.7
9	8.6	8.8	7.9	8.1	9.5	9.2	8.7	9.7	9.2	4.3	25	7.5
10	8.5	8.9	e6.4	7.7	9.7	9.0	8.8	9.8	9.2	9.9	25	7.5
11	8.6	9.2	e7.1	7.5	9.3	e7.5	8.6	9.9	9.0	15	27	7.1
12	8.7	9.0	7.9	7.8	9.3	e7.8	8.8	9.8	9.2	11	26	7.5
13	10	8.9	8.0	e6.4	9.4	e8.3	8.8	9.7	9.0	8.9	23	7.5
14	9.7	8.9	e6.4	e7.8	e7.7	9.1	8.9	9.2	9.1	11	19	7.5
15	9.6	8.6	e5.4	e5.6	e8.3	9.1	9.0	9.5	9.6	10	17	7.6
16	8.3	8.8	e6.0	e7.3	e8.9	9.3	8.9	9.4	9.5	11	15	7.3
17	8.0	8.8	e7.1	9.2	9.4	9.1	9.5	9.3	8.7	9.4	15	7.2
18	7.9	8.7	e6.6	8.2	9.3	9.0	11	9.4	8.6	6.0	15	7.1
19	7.7	8.9	e6.5	8.2	9.1	8.6	9.5	9.3	8.4	5.3	13	7.1
20	7.3	8.6	e6.3	8.1	9.2	8.6	9.0	9.2	8.5	5.1	11	7.0
21	7.2	8.3	e6.4	8.1	9.1	8.6	9.1	9.2	8.6	5.0	11	6.8
22	8.2	8.4	e6.8	8.1	e8.3	8.6	9.3	9.1	7.5	4.5	12	6.9
23	8.8	8.5	e6.7	8.0	8.9	8.6	9.5	9.2	1.8	2.1	15	8.6
24	8.4	8.4	e6.1	e6.7	9.0	8.4	9.5	9.8	4.9	1.4	21	9.1
25	7.9	8.4	e7.1	e6.2	9.2	8.4	9.3	9.8	7.6	3.2	24	8.8
26	7.7	8.5	11	e6.6	9.2	8.5	9.3	12	8.4	4.2	23	7.6
27	7.3	8.4	9.6	e7.5	9.1	8.3	9.2	11	8.2	5.0	23	7.2
28	7.8	8.4	9.1	e8.2	e7.6	8.3	9.3	9.5	7.7	9.8	20	6.6
29	8.2	8.4	8.6	8.7	---	8.5	9.5	9.2	8.8	12	14	6.9
30	18	8.2	8.4	8.8	---	8.6	10	9.2	0.47	7.0	12	6.9
31	9.8	---	8.1	8.9	---	8.4	---	9.0	---	4.3	19	---
<b>Total</b>	270.7	260.9	232.8	242.4	250.2	268.4	272.0	299.7	245.17	167.35	508.63	231.1
<b>Mean</b>	8.73	8.70	7.51	7.82	8.94	8.66	9.07	9.67	8.17	5.40	16.4	7.70
<b>Max</b>	18	9.2	11	10	9.7	9.3	11	12	9.6	15	27	10
<b>Min</b>	7.2	8.2	5.4	5.6	7.6	7.4	8.4	9.0	0.47	0.18	0.56	6.6
<b>Ac-ft</b>	537	517	462	481	496	532	540	594	486	332	1,010	458

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2009, BY WATER YEAR (WY)**

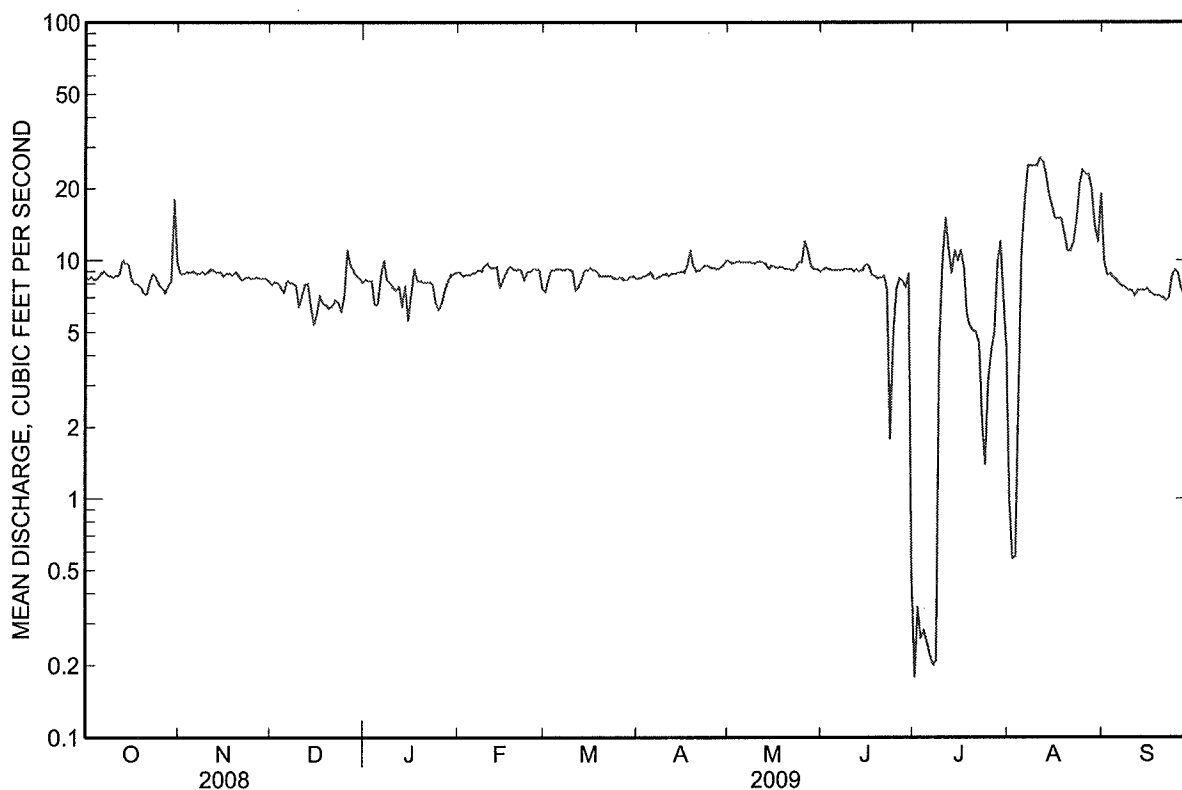
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	8.12	8.23	8.25	8.81	10.2	10.8	11.3	13.4	19.3	21.5	20.4	9.65
<b>Max</b>	18.8	13.6	12.1	21.1	32.9	35.5	41.5	107	124	72.1	92.4	29.0
<b>(WY)</b>	(1970)	(1997)	(1966)	(1962)	(1968)	(1994)	(1970)	(2008)	(1967)	(2006)	(1978)	(1978)
<b>Min</b>	3.84	4.98	4.75	3.53	4.32	6.11	4.98	2.87	4.47	3.13	1.66	2.78
<b>(WY)</b>	(1978)	(1978)	(2003)	(2004)	(2004)	(2002)	(1978)	(1978)	(2004)	(2003)	(2003)	(2003)

06838000 Red Willow Creek near Red Willow, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1962 - 2009 <sup>a</sup>	
Annual total	6,257.03		3,249.35			
Annual mean	17.1		8.90		12.5	
Highest annual mean					25.5	1967
Lowest annual mean					4.75	2004
Highest daily mean	2,220	May 24	27	Aug 11	2,220	May 24, 2008
Lowest daily mean	0.53	Aug 4	0.18	Jul 1	0.00	Sep 2, 1995
Annual seven-day minimum	3.1	Jun 30	0.25	Jul 1	0.17	Jul 30, 2005
Maximum peak flow			52	Oct 30	3,900	May 23, 2008
Maximum peak stage			5.65	Oct 30	16.02	May 23, 2008
Annual runoff (ac-ft)	12,410		6,450		9,070	
10 percent exceeds	12		11		19	
50 percent exceeds	7.8		8.7		8.8	
90 percent exceeds	4.4		6.4		4.8	

<sup>a</sup> Since beginning of storage in Hugh Butler Lake.





Water-Data Report 2009

**06843500 Republican River at Cambridge, Nebr.**

Republican Basin  
Upper Republican Subbasin

LOCATION.--Lat 40°17'04", long 100°08'37" referenced to North American Datum of 1983, in NW ¼ SE ¼ sec.28, T.4 N., R.25 W., Furnas County, NE, Hydrologic Unit 10250004, on left bank 400 ft south of U.S. Highways 6 and 34, 0.5 mi downstream from Medicine Creek, 1 mi east of Cambridge, 1.3 mi upstream from Cambridge diversion dam, and at mile 315.

DRAINAGE AREA.--14,460 mi<sup>2</sup> of which 6,680 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--September 1945 to current year.

REVISED RECORDS.--WDR NE-84-1: 1983(M). WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,239.07 ft above sea level. Prior to July 13, 1948, non-recording gage at site 150 ft upstream at same datum, and July 13, 1948 to Sept. 25, 1950, at present site and datum.

COOPERATION.--Records provided by Nebraska Department of Natural Resources and reviewed by the U.S. Geological Survey.

REMARKS.--Records good except for estimated daily discharges and discharges above 3400 ft<sup>3</sup>/s, which are poor. Natural flow affected by irrigation development above station and since 1949 by regulation from upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--(BEFORE START OF STORAGE IN HARRY STRUNK LAKE) Maximum discharge, 160,000 ft<sup>3</sup>/s, June 22, 1947, gage height 16.70 ft, from floodmarks; minimum daily discharge, 6.4 ft<sup>3</sup>/s, Aug. 14, 1949.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum gage height since at least 1826, 17.6 ft, May 31 to June 1, 1935, information from local resident, discharge, about 280,000 ft<sup>3</sup>/s.

## 06843500 Republican River at Cambridge, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	22	128	122	e112	e135	132	136	e45	117	180	94	171
2	22	129	122	e120	e130	134	135	e46	113	177	86	163
3	22	129	116	e142	134	135	136	e55	118	164	148	150
4	22	130	114	e123	131	135	142	e65	112	154	186	e48
5	23	129	111	e111	130	136	146	e62	109	139	185	e24
6	33	128	114	e104	129	136	141	e65	110	138	149	e22
7	28	127	116	e101	129	135	140	e63	108	145	135	e21
8	27	127	118	e108	128	135	140	e63	107	157	131	e20
9	31	125	117	e116	135	136	139	e61	135	171	135	e19
10	33	128	116	e130	135	135	138	e63	138	162	206	e19
11	33	135	115	e126	132	132	133	e64	110	173	197	e19
12	35	131	118	e128	130	131	138	e66	116	178	219	e19
13	39	131	121	e123	132	133	139	e67	113	149	214	e18
14	43	128	110	e126	129	134	132	e64	118	139	170	e18
15	68	118	e86	e101	129	135	110	e61	123	131	167	e18
16	77	119	e88	e106	130	136	113	e60	150	234	151	e18
17	78	117	e93	e113	134	135	120	e59	159	106	146	e17
18	94	118	e100	e115	143	135	153	e59	141	e72	130	e17
19	96	119	e116	e123	140	134	151	e59	143	e72	128	e17
20	95	118	e114	e119	139	135	137	e151	135	e71	106	e16
21	96	118	e117	e123	138	135	129	115	130	e77	122	e16
22	123	119	e112	e124	137	138	e68	119	126	90	122	e15
23	122	119	e115	e125	137	141	e57	73	e133	113	130	e15
24	115	120	e122	e108	138	138	e54	79	133	e77	211	e16
25	113	120	e130	e104	138	136	e50	83	153	e73	235	e18
26	108	121	e136	e96	137	136	e47	110	171	e73	216	e18
27	104	121	e147	e94	136	136	e45	144	153	e127	136	e19
28	119	121	e111	e95	132	136	e43	198	157	e174	97	e20
29	123	123	e121	e108	---	137	e44	162	184	145	97	e20
30	125	123	e122	e109	---	137	e44	135	176	148	100	e22
31	128	---	e123	e122	---	136	---	119	---	108	128	---
<b>Total</b>	2,197	3,719	3,583	3,555	3,747	4,195	3,300	2,635	3,991	4,117	4,677	1,013
<b>Mean</b>	70.9	124	116	115	134	135	110	85.0	133	133	151	33.8
<b>Max</b>	128	135	147	142	143	141	153	198	184	234	235	171
<b>Min</b>	22	117	86	94	128	131	43	45	107	71	86	15
<b>Ac-ft</b>	4,360	7,380	7,110	7,050	7,430	8,320	6,550	5,230	7,920	8,170	9,280	2,010

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	105	137	134	141	215	265	237	278	320	341	273	135
<b>Max</b>	515	425	389	384	579	1,684	756	1,624	1,743	1,613	1,202	1,935
<b>(WY)</b>	(1966)	(1966)	(1966)	(1959)	(1966)	(1960)	(1958)	(1957)	(1962)	(1962)	(1962)	(1951)
<b>Min</b>	0.00	0.06	0.09	0.11	1.98	28.2	17.7	6.98	24.8	133	96.7	0.12
<b>(WY)</b>	(2005)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2006)	(2009)	(2006)	(2003)

06843500 Republican River at Cambridge, Nebr.—Continued

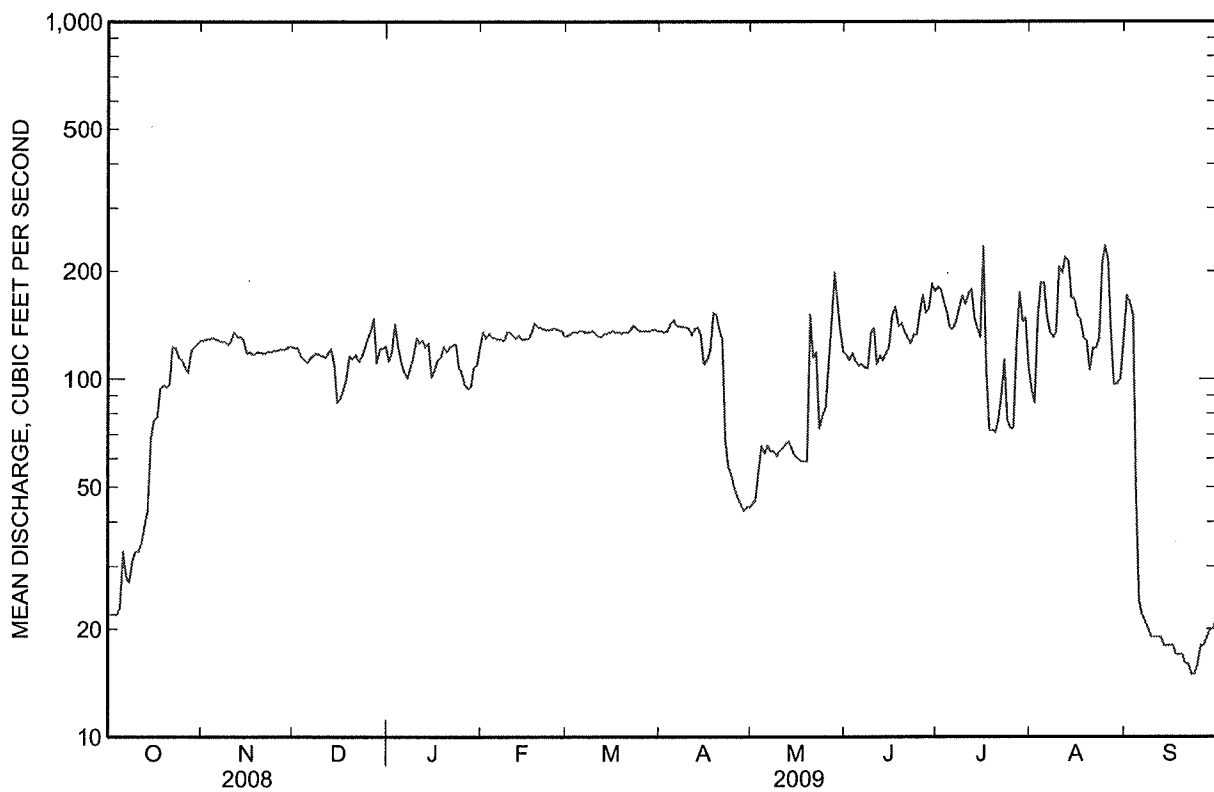
SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1950 - 2009 <sup>a</sup>	
Annual total	67,948		40,729			
Annual mean	186		112		215	
Highest annual mean					686	1951
Lowest annual mean					41.0	2004
Highest daily mean	4,460	May 25	235	Aug 25	8,610	Mar 22, 1960
Lowest daily mean	21	Sep 23	15	Sep 22	0.00	Oct 13, 2002
Annual seven-day minimum	21	Sep 23	16	Sep 18	0.00	Oct 13, 2002
Maximum peak flow			368	Jul 16	<sup>b</sup> 11,000	Sep 4, 1951
Maximum peak stage			3.49	Jul 16	<sup>c</sup> 10.21	May 25, 2008
Annual runoff (ac-ft)	134,800		80,790		155,900	
10 percent exceeds	299		151		390	
50 percent exceeds	121		122		150	
90 percent exceeds	62		33		50	

<sup>a</sup> Since beginning of storage in Harry Strunk Lake.

<sup>b</sup> Gage height, 7.02 ft.

<sup>c</sup> Discharge, 5,210 ft<sup>3</sup>/s, from rating curve extension above 3,400 ft<sup>3</sup>/s.







Water-Data Report 2009

**06844500 Republican River near Orleans, Nebr.**

Republican Basin  
Harlan County Reservoir Subbasin

LOCATION.--Lat 40°07'54", long 99°30'09" referenced to North American Datum of 1983, in NE ¼ NE ¼ sec.19, T.2 N., R.19 W., Harlan County, NE, Hydrologic Unit 10250009, on right bank just downstream from bridge on State Highway 89, 200 ft downstream from Burlington Northern Inc. bridge, 2 mi west of Orleans, 2.8 mi upstream from Sappa Creek, 23 mi upstream from Harlan County Dam, and at mile 262.

DRAINAGE AREA.--15,580 mi<sup>2</sup> of which 6,700 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1947 to current year.

REVISED RECORDS.--WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 1,972.57 ft above sea level. Prior to June 2, 1948, non-recording gage at present site and datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Natural flow affected by irrigation development above station and regulation by upstream reservoirs.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1826 occurred June 1, 1935. Flood of June 23, 1947, gage height, 14.00 ft, from floodmark, approximate discharge, 145,000 ft<sup>3</sup>/s.

## 06844500 Republican River near Orleans, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	50	190	179	e151	e251	161	168	151	137	70	81	40
2	47	191	e180	e154	e222	165	166	134	133	64	74	39
3	e46	191	179	e139	e193	176	169	130	127	65	66	38
4	e47	191	173	e133	e208	178	172	127	122	71	56	36
5	48	192	165	e129	e203	179	175	131	123	65	59	35
6	68	189	175	e127	e208	178	177	132	118	64	76	36
7	82	186	176	e132	200	177	172	128	118	62	72	41
8	79	183	177	e138	184	175	172	126	116	59	62	37
9	76	182	177	e136	188	176	173	120	113	54	53	34
10	69	189	168	e132	191	174	170	118	102	49	48	33
11	68	204	168	e137	189	165	171	117	375	46	43	34
12	76	203	175	e136	180	161	172	117	216	60	42	36
13	114	204	179	e141	180	170	175	117	166	86	38	33
14	136	200	167	e136	172	173	175	113	154	101	35	33
15	129	194	e129	e130	168	175	174	112	137	86	47	33
16	117	190	e146	e165	169	174	165	109	129	90	74	33
17	119	184	e166	e179	180	174	160	108	e140	105	75	32
18	124	183	e174	e198	179	172	182	108	151	145	69	32
19	126	184	e169	e208	176	170	195	105	137	108	66	32
20	129	181	e141	e213	176	172	200	99	129	83	66	32
21	136	179	e135	e203	174	173	189	98	131	73	61	32
22	192	180	e138	e198	170	176	181	116	122	70	58	32
23	375	180	e141	e174	170	180	172	117	114	96	52	45
24	467	180	e151	e155	175	176	147	137	100	107	47	59
25	308	181	e160	e136	176	172	136	111	87	250	39	54
26	238	181	e169	e116	179	171	131	116	80	122	52	53
27	204	180	e166	e126	176	167	126	138	76	86	73	53
28	191	180	e165	e169	169	166	121	140	77	75	63	49
29	188	182	e166	e213	---	168	120	145	75	73	56	48
30	193	182	e160	e242	---	173	127	161	73	85	48	49
31	191	---	e154	e256	---	169	---	147	---	82	41	---
<b>Total</b>	4,433	5,616	5,068	5,002	5,206	5,336	4,933	3,828	3,878	2,652	1,792	1,173
<b>Mean</b>	143	187	163	161	186	172	164	123	129	85.5	57.8	39.1
<b>Max</b>	467	204	180	256	251	180	200	161	375	250	81	59
<b>Min</b>	46	179	129	116	168	161	120	98	73	46	35	32
<b>Ac-ft</b>	8,790	11,140	10,050	9,920	10,330	10,580	9,780	7,590	7,690	5,260	3,550	2,330

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	116	153	152	155	269	341	303	364	428	234	162	130
<b>Max</b>	840	519	438	392	772	1,720	915	1,528	2,732	1,602	1,396	2,026
<b>(WY)</b>	(1966)	(1966)	(1966)	(1953)	(1949)	(1960)	(1949)	(1951)	(1948)	(1962)	(1962)	(1951)
<b>Min</b>	0.00	0.00	0.00	1.09	12.8	32.4	35.6	17.5	1.84	0.06	0.00	0.00
<b>(WY)</b>	(1992)	(2003)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2006)	(2002)	(2002)

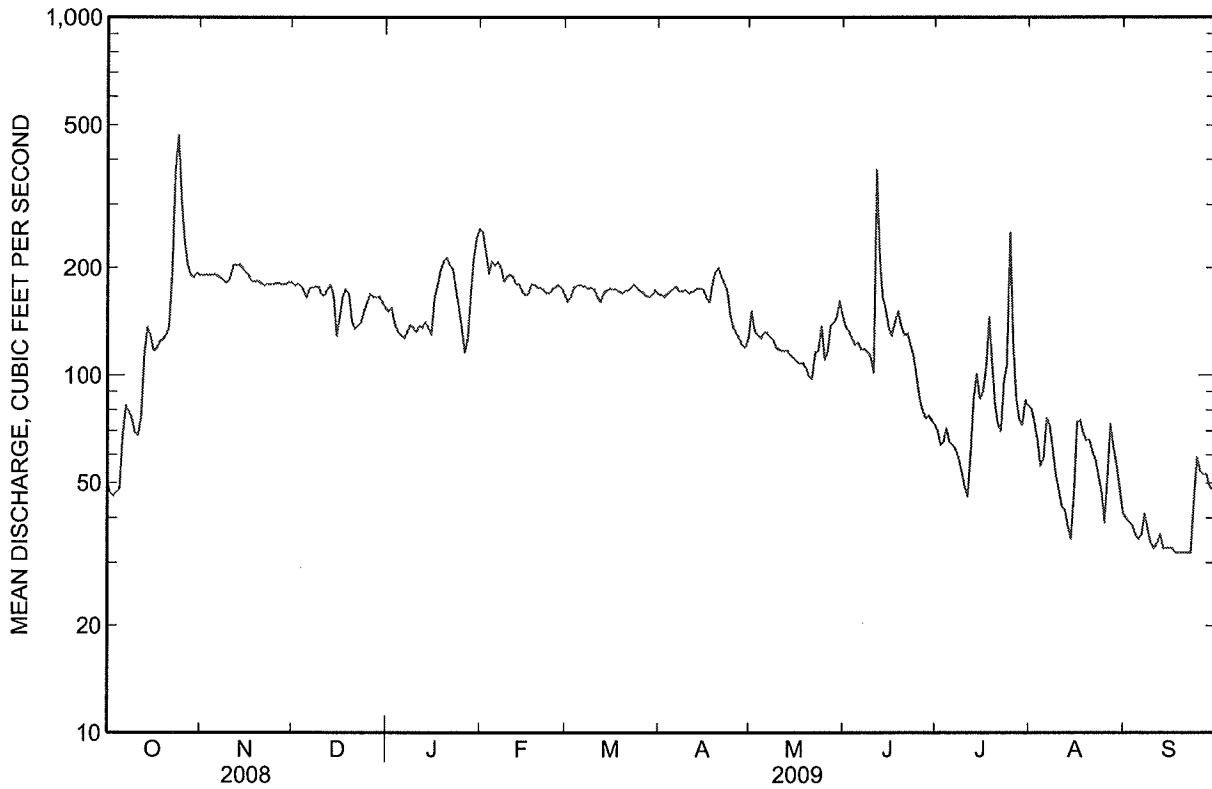
06844500 Republican River near Orleans, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1948 - 2009	
<b>Annual total</b>	93,346		48,917			
<b>Annual mean</b>	255		134		233	
<b>Highest annual mean</b>					746	1951
<b>Lowest annual mean</b>					9.44	2004
<b>Highest daily mean</b>	7,870	May 26	467	Oct 24	18,400	Jun 22, 1948
<b>Lowest daily mean</b>	31	Aug 6	32	Sep 17	0.00	Sep 15, 1952
<b>Annual seven-day minimum</b>	37	Aug 3	32	Sep 16	0.00	Sep 15, 1952
<b>Maximum peak flow</b>			734	Jun 11	<sup>a</sup> 40,600	Jun 22, 1948
<b>Maximum peak stage</b>			4.29	Jun 11	<sup>b</sup> 13.14	May 26, 2008
<b>Annual runoff (ac-ft)</b>	185,200		97,030		169,100	
<b>10 percent exceeds</b>	325		191		449	
<b>50 percent exceeds</b>	169		138		147	
<b>90 percent exceeds</b>	69		48		25	

<sup>a</sup> Gage height, 11.25 ft; discharge from rating curve extended above 29,000 ft<sup>3</sup>/s.

<sup>b</sup> Discharge, 9,680 ft<sup>3</sup>/s.





Water-Data Report 2009

**06847500 Sappa Creek near Stamford, Nebr.**

Republican Basin  
Lower Sappa Subbasin

LOCATION.--Lat 40°07'39", long 99°36'42" referenced to North American Datum of 1983, in SE ¼ NE ¼ sec.19, T.2 N., R.20 W., Harlan County, NE, Hydrologic Unit 10250011, on right upstream side of county bridge, 0.5 mi west and 0.1 mi south of Stamford.

DRAINAGE AREA.--3,840 mi<sup>2</sup> of which 470 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1919: 1960. WDR NE-71-1: Calendar year totals. WRD NE-82-1: 1979(M). WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 2001.02 ft above National Geodetic Vertical Datum of 1988. October 1, 1945 to September 30, 2007, water-stage recorder 4.0 mi downstream at a datum of 1,981.31 ft.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow affected by groundwater irrigation development within the basin.

## 06847500 Sappa Creek near Stamford, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	e0.00	9.4	8.7	e9.0	e12	e11	12	13	43	6.5	14	7.2
2	e0.00	8.5	e8.3	e11	e12	12	11	12	28	6.6	15	6.9
3	e0.00	7.8	8.2	e9.2	e12	e12	11	13	21	6.7	55	6.3
4	e0.00	7.4	e7.6	e5.3	e13	12	11	13	16	10	31	6.2
5	e0.00	7.6	e5.5	e5.0	e14	13	12	14	13	9.2	22	6.0
6	e0.00	7.1	8.4	e8.4	e15	12	11	14	10	9.0	23	5.7
7	0.26	6.4	8.7	e12	e16	13	12	14	8.6	11	16	5.7
8	0.20	5.5	9.4	e14	e16	13	12	15	7.7	7.9	13	5.6
9	0.05	6.0	e8.2	e14	17	13	13	14	6.9	6.5	11	5.4
10	e0.00	5.9	e7.7	e11	16	13	12	13	6.3	5.8	10	5.3
11	e0.00	7.8	e8.0	e13	16	e10	12	13	9.3	5.4	9.4	5.2
12	0.04	8.8	e8.0	e15	e11	e11	12	13	13	7.9	8.7	5.2
13	1.5	9.6	e9.4	e13	e9.5	e12	13	14	13	11	8.0	5.4
14	0.70	9.6	e7.5	e11	e6.2	12	13	13	12	16	7.6	5.3
15	2.2	8.9	e2.4	e7.5	e8.0	13	13	13	12	12	8.4	5.1
16	1.0	9.1	e2.9	e11	e13	13	13	12	69	40	8.5	5.0
17	0.89	9.5	e4.6	e13	e15	12	13	12	161	67	9.9	4.7
18	0.74	9.2	e4.9	e14	e14	13	15	12	50	32	29	4.5
19	0.46	9.5	e4.6	e14	e13	14	17	11	26	25	32	4.4
20	0.33	9.3	e3.0	e14	e12	14	17	10	20	19	19	4.3
21	0.73	9.2	e1.6	e15	e13	15	17	8.4	17	14	19	4.0
22	16	e8.8	e2.0	e14	e13	14	17	6.1	16	13	15	3.7
23	155	9.2	e2.3	e12	e12	15	17	5.6	15	140	10	4.4
24	185	8.9	e3.9	e8.2	13	14	17	6.3	13	228	11	4.5
25	118	8.8	e5.2	e7.7	13	14	16	10	11	47	8.0	4.8
26	69	e8.1	e8.4	e6.2	13	13	14	14	9.5	27	7.2	5.3
27	41	8.4	e7.6	e5.0	12	12	13	21	8.4	19	6.6	6.0
28	27	8.1	e8.2	e6.5	e11	12	12	30	7.6	16	6.3	5.9
29	20	8.8	e8.5	e9.7	---	12	12	40	7.2	15	7.2	5.4
30	16	9.3	e8.1	e13	---	12	13	59	6.8	14	7.9	5.6
31	12	---	e7.8	e14	---	12	---	50	---	13	7.3	---
<b>Total</b>	668.10	250.5	199.6	335.7	360.7	393	403	508.4	657.3	860.5	456.0	159.0
<b>Mean</b>	21.6	8.35	6.44	10.8	12.9	12.7	13.4	16.4	21.9	27.8	14.7	5.30
<b>Max</b>	185	9.6	9.4	15	17	15	17	59	161	228	55	7.2
<b>Min</b>	0.00	5.5	1.6	5.0	6.2	10	11	5.6	6.3	5.4	6.3	3.7
<b>Ac-ft</b>	1,330	497	396	666	715	780	799	1,010	1,300	1,710	904	315

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	34.6	11.4	9.53	8.35	17.7	30.9	22.2	50.8	128	77.9	50.2	35.3
<b>Max</b>	965	145	96.2	71.5	182	486	164	522	878	891	544	708
<b>(WY)</b>	(1947)	(1947)	(1966)	(1966)	(1966)	(1960)	(1960)	(1949)	(1947)	(1951)	(1950)	(1951)
<b>Min</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>(WY)</b>	(1954)	(1955)	(1955)	(1955)	(1956)	(1956)	(1956)	(1956)	(1981)	(1977)	(1955)	(1959)

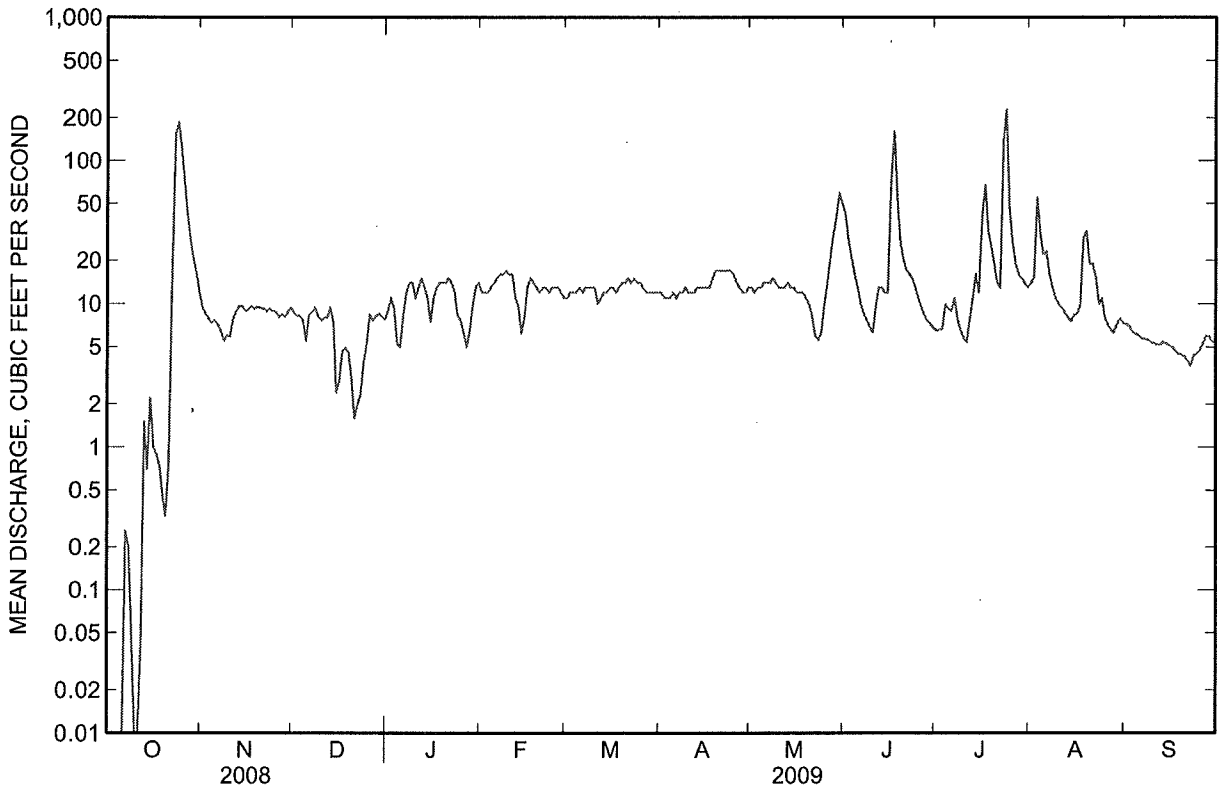
06847500 Sappa Creek near Stamford, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1946 - 2009	
Annual total	3,898.13		5,251.80			
Annual mean	10.7		14.4		39.8	
Highest annual mean					229	1951
Lowest annual mean					0.00	2006
Highest daily mean	470	May 26	228	Jul 24	16,600	Jun 24, 1966
Lowest daily mean	0.00	Jan 1	0.00	Oct 1	0.00	Sep 12, 1953
Annual seven-day minimum	0.00	Jan 1	0.04	Oct 1	0.00	Sep 12, 1953
Maximum peak flow			470	Jul 24	<sup>a</sup> 43,400	Jun 24, 1966
Maximum peak stage			12.27	Jul 24	<sup>b</sup> 22.13	Jun 24, 1966
Annual runoff (ac-ft)	7,730		10,420		28,850	
10 percent exceeds	13		19		71	
50 percent exceeds	0.05		11		4.8	
90 percent exceeds	0.00		4.6		0.00	

<sup>a</sup> From combined peak flow measurements of contracted-opening and flow over road.

<sup>b</sup> From floodmark, site and datum then in use.





Water-Data Report 2009

**06852500 Courtland Canal at Nebraska-Kansas Stateline**

Republican Basin  
Middle Republican Subbasin

LOCATION.--Lat 40°00'15", long 98°07'55" referenced to North American Datum of 1927, in SW ¼ SE ¼ sec.32, T.1 N., R.7 W., Nuckolls County, NE, Hydrologic Unit 10250016, on left bank 0.2 mi upstream from Nebraska-Kansas State line and 3.5 mi southwest of Superior, NE.

DRAINAGE AREA.--N.A.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1954 to current year.

GAGE.--Water-stage recorder with satellite telemetry and a concrete Parshall flume control. Datum of gage is 1,612.46 ft, above sea level.

REMARKS.--Records good. Flow is completely regulated by Courtland diversion dam on the Republican River. There are numerous diversions above the station for irrigation.

## 06852500 Courtland Canal at Nebraska-Kansas Stateline—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98	255	199	124
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92	262	196	127
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82	247	195	129
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82	215	193	91
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83	190	186	60
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82	189	180	60
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82	193	180	59
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91	190	195	63
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98	190	208	59
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98	188	230	72
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	106	185	239	69
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	111	199	214	67
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112	157	189	64
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	113	106	182	66
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	115	84	182	70
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	131	85	189	75
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	155	83	191	82
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	166	83	182	91
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	165	83	161	85
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	176	109	147	68
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	187	137	142	64
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66	203	147	139	65
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66	209	160	137	61
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66	206	183	136	59
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67	213	188	127	59
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74	217	183	111	61
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91	208	204	85	59
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96	207	225	60	55
29	0.00	0.00	0.00	0.00	---	0.00	0.00	96	208	231	59	52
30	0.00	0.00	0.00	0.00	---	0.00	0.00	94	225	211	59	52
31	0.00	---	0.00	0.00	---	0.00	---	92	---	197	94	---
<b>Total</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	832.00	4,321	5,359	4,987	2,168
<b>Mean</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.8	144	173	161	72.3
<b>Max</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96	225	262	239	129
<b>Min</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82	83	59	52
<b>Ac-ft</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,650	8,570	10,630	9,890	4,300

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	29.6	13.9	8.21	8.92	8.82	12.7	19.6	52.4	111	323	256	62.2
<b>Max</b>	464	212	75.0	84.4	91.1	187	109	237	362	627	570	205
<b>(WY)</b>	(1958)	(1967)	(2001)	(1992)	(2007)	(2000)	(2000)	(1958)	(1988)	(1976)	(1976)	(1995)
<b>Min</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.9	12.5	0.64	0.00
<b>(WY)</b>	(1955)	(1955)	(1955)	(1955)	(1955)	(1955)	(1955)	(1957)	(2004)	(2005)	(2004)	(1977)



06852500 Courtland Canal at Nebraska-Kansas Stateline—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1955 - 2009	
Annual total	12,859.39		17,667.00			
Annual mean	35.1		48.4		76.3	
Highest annual mean					138	1976
Lowest annual mean					19.5	1955
Highest daily mean	307	Jul 7	262	Jul 2	731	Oct 22, 1957
Lowest daily mean	0.00	Jan 1	0.00	Oct 1	<sup>a</sup> 0.00	Oct 1, 1954
Annual seven-day minimum	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1, 1954
Maximum peak flow			276	Jul 1		
Maximum peak stage			2.82	Jul 1		
Annual runoff (ac-ft)	25,510		35,040		55,250	
10 percent exceeds	153		188		262	
50 percent exceeds	0.00		0.00		0.00	
90 percent exceeds	0.00		0.00		0.00	

<sup>a</sup> No flow for many days every year.

