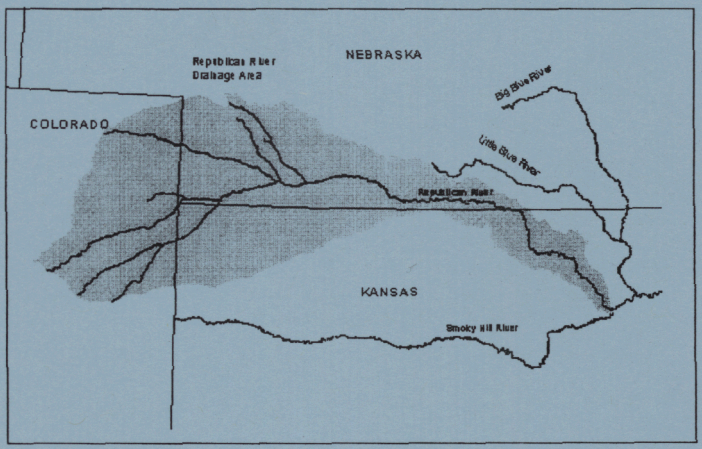
REPUBLICAN RIVER COMPACT ADMINISTRATION

FORTY-FIRST ANNUAL REPORT

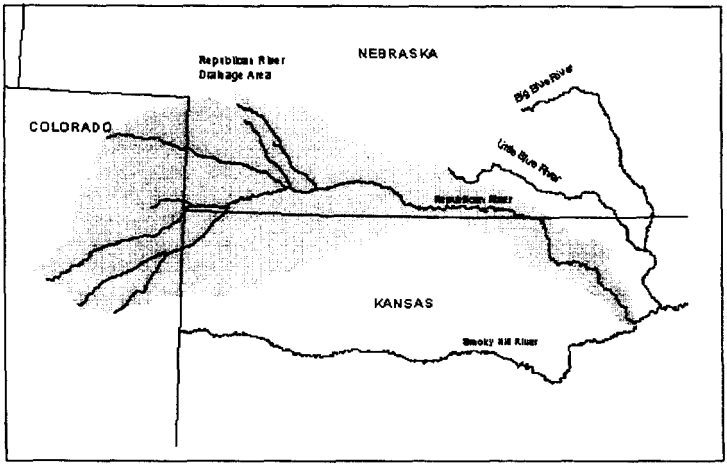


For The Year 2000

McCook, Nebraska
June 7, 2001

REPUBLICAN RIVER COMPACT ADMINISTRATION

FORTY-FIRST ANNUAL REPORT



For The Year 2000

McCook, Nebraska
June 7, 2001

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ANNUAL REPORT
42ND ANNUAL MEETING
REPUBLICAN RIVER COMPACT ADMINISTRATION

Minutes

A transcript of this meeting was prepared by a court reporter. It has been reviewed by each of the states and approved by the Compact Administration as the official minutes of the 42nd annual meeting of the Compact Administration. Copies of the transcript can be obtained from the offices of each of the commissioners. Below is a brief summary of the meeting.

Introductions

The meeting was called to order by Chairman Patterson at 9:00 a.m., June 7, 2001, Community Building, Red Willow County Fair Board, McCook, Nebraska.

Chairman Patterson welcomed everyone in attendance. Chairman Patterson of Nebraska, Commissioner Simpson of Colorado and Commissioner Pope of Kansas each introduced their staff and others in attendance. Those in attendance were:

Name	Representing
Roger K. Patterson	Nebraska Commissioner
David L. Pope	Kansas Commissioner
Hal D. Simpson	Colorado Commissioner
Jeff Shafer	Nebraska Department of Natural Resources
Brad Edgerton	Nebraska Department of Natural Resources
Dave Vogler	Nebraska Department of Natural Resources
David Cookson	Nebraska Attorney General's Office
Dick Stenzel	Colorado Division of Water Resources
Carol Angel	Colorado Attorney General's Office
Ken Knox	Colorado Division of Water Resources
David W. Barfield	Kansas Department of Agriculture, Division of Water Resources
Lee Rolfs	Kansas Department of Agriculture
John Draper	Montgomery and Andrews, counsel for Kansas
Steve Ronshaugen	Bureau of Reclamation, McCook, Nebraska
Dennis Allacher	Bureau of Reclamation, McCook, Nebraska
Marv Swanda	Bureau of Reclamation, McCook, Nebraska
Pam Bonebright	Nebraska Department of Natural Resources
Shane Stanton	Nebraska Department of Natural Resources
David Gunderson	Nebraska Department of Natural Resources
Don Blankenau	Kutak Rock, counsel for Nebraska
Clayton Lukow	Southern Power, Nebraska
Ralph Best	Frenchman-Cambridge Irrigation District, Nebraska
Roy Patterson	Frenchman-Cambridge Irrigation District, Nebraska

Wayne Madsen	Middle Republican NRD, Nebraska
Bob Joseph	U.S.G.S. – Nebraska
Ray Luhman	GMD #4 – Kansas
Senator Tom Baker	District 44, Nebraska
Dick Neel	Nebraska Farm Bureau
John Turnbull	Tri-Basin NRD, Nebraska
Dave Eigenberg	Lower Republican NRD, Nebraska
Robert Andrews	Frenchman-Cambridge Irrigation District, Nebraska
Connie Jo Discoe	McCook Gazette, Nebraska
Scott Ross	Kansas Department of Agriculture, Division of Water Resources
George Austin	Kansas Department of Agriculture, Division of Water Resources
Stan Goodwin	Frenchman-Cambridge Irrigation District, Nebraska
R.E. Pelton	Kansas River Water Assurance Dist. #1
Joyce Newpport	Cambridge Clarion, Nebraska
Kenneth Albert	Frenchman Valley Irrigation District, Nebraska
Robert Ambrosek	Upper Republican NRD, Nebraska
Bob Hipple	Upper Republican NRD, Nebraska
Robert Wallen	Frenchman-Cambridge Irrigation District, Nebraska
C.K. Swanson	Self
Marie Owen	McCook Area Chamber of Commerce, Nebraska
Norma Sitzman	Self
Don Felker	H&RW Irrigation District, Nebraska
Don Ruggles	H&RW Irrigation District, Nebraska
Kay Lavene	McCook Economic Development Corp. , Nebraska
Richard Oldham	Corps of Engineers – Kansas
Norman Nelson	URBAC – Kansas
Ron Daniel	Southwest NE RC&D
Mark Seacey	McCook National Bank, Nebraska
Terry Wollen	Lower Republican NRD, Nebraska
Diana Lamberson	Hastings Tribune, Nebraska
Dale Book	Spronk Water Engineers, engineering consultant for Kansas
Gayle Haag	Middle Republican NRD, Nebraska
Ray Luhman	Northwest Kansas Groundwater Management District No. 4

Approval of agenda

The Agenda was approved as proposed:

1. Introductions
2. Adoption of Agenda
3. Approval of Previous Annual Meeting Minutes and Annual Report
4. Report of Chairman (Roger Patterson, Commissioner for Nebraska)
5. Commissioners' Reports
   - Colorado
   - Kansas
6. Federal Reports:
   - Bureau of Reclamation
   - Corps of Engineers
   - U.S. Geological Survey
7. Engineering Committee Report
8. Legal Committee Report
9. Old Business
10. New Business
11. Assignments to the Compact's Committees:
    - Engineering Committee
    - Legal Committee
12. Remarks from the Public
13. Future Meeting Arrangements
14. Adjournment

Approval of 40th Annual Report

It was moved by Commissioner Simpson, seconded by Commissioner Pope, and passed, that the minutes of the 40th Annual Report be approved for publication.

Approval of Transcript of the 41st Annual Meeting

It was moved by Commissioner Pope, seconded by Commissioner Simpson, and passed, that the transcript as the minutes and record of the last annual meeting be approved.

Report of Chairman

Chairman Patterson noted some organizational and personnel changes at the Department. Chairman Patterson pointed out the creation of the new agency of the Nebraska Department of Natural Resources. Chairman Patterson gave an update on legislative activity that occurred this past year. He reported on the status of interstate litigation, stating that the settlement in Nebraska v. Wyoming, No. 108, Original is moving ahead with no significant problems.

Chairman Patterson provided a brief report regarding actions by each of the Republican River basin Natural Resources Districts and the drought condition in Nebraska. Brad Edgerton provided an overview of water administration in the Republican River basin in Nebraska in the 2000 growing season.

Report of the Commissioner from Colorado

Commissioner Simpson reported that Colorado also had a dry year and they have computed their consumptive use to be roughly 25,000 acre-feet of the annual allocation of 54,100 acre-feet. He reported that the state ranged from 70 to 100 percent of the long-term average for snow pack. In the Republican River Basin the spring rains have helped significantly but the content of Bonny Reservoir is several thousand acre-feet below its desired operating level. Commissioner Simpson gave an update on legislative activity to include a bill to create a pilot water bank for the Arkansas River Basin. He gave a brief summary of litigation with Kansas on the Arkansas River Compact.

Report of the Commissioner from Kansas

Commissioner Pope reported that Kansas experienced an extremely dry period in 2000 throughout the basin. Kansas has had some better rains in the first half of 2001. He stated that, as anticipated, they had to begin water administration in mid-June 2000 which continued through the rest of the summer in the Lower Republican part of the basin. Commissioner Pope provided an update of legislative activity to including a bill which addressed water banking, flex accounts, and additional enforcement authorities. Commissioner Pope's report included an update on status of interstate water litigation by John Draper in the case of Kansas v. Colorado, No. 105 Original, regarding the Arkansas River Compact; and the case of Kansas v. Nebraska and Colorado, No. 126 Original, regarding the Republican River Compact.

Report by the Bureau of Reclamation, U.S. Department of Interior

Marv Swanda reported that they are involved in the compact litigation as amicus to the case. He provided an update on the Bureau's work with the irrigation districts of the Republican River basin on long-term contract renewal for irrigation water supplies. He reported on an agreement between the Corps and Reclamation on the usage of the sediment pool in Harlan County for the irrigation function and that they are in contract renewal process with Kirwin and Webster Irrigations Districts in Kansas. Mr. Swanda provided an update on 2000 operations of the reservoirs in the basin. He reported that there has been some discussion about maintaining a higher minimum pool at Enders but nothing has been decided at this point. He made mention of emergency actions plans for all dams are in place. Mr. Swanda's report is attached as Exhibit 1.

Report by the U. S. Army, Corps of Engineers

Richard Oldham reported on the Harlan County Lake Dam safety assurance studies and evaluation of its tainter gates at Harlan County dam. He also reported on the Milford Lake Section 1135 wetlands restoration project. He also reported that they have started building a Kansas River model , with participation by the State of Kansas, to model the whole system.

Report by the U.S. Geological Survey

Bob Joseph reported on the U.S. Geological Survey's cooperative stream gaging program in the basin and characterized streamflow in the basin in the past year as below the annual means for the period of record throughout the basin. The lowest annual means for the period of record were recorded at four sites: North Fork River, Rock Creek, South Fork of the Republican River and Frenchman Creek. Mr. Joseph's report is attached as Exhibit 2.

Engineering Committee Report

Dick Stenzel provided the report for the Engineering Committee in place of Ann Bleed, who was not able to be present. A draft of the report was provided by the committee to the Administration. Mr. Stenzel reviewed the assignment made by the Administration and the committee's efforts to fulfill that assignment. He noted that the report was complete and final except diversions by the Hale and Laird Canals needed to be added and that the committee had agreed to add a statement that the report was provided for general information purposes only and was not intended for use in determining compact compliance. The Administration requested the data on diversions for the Pioneer Canal also be added to the final report. A motion was made and approved to accept the report subject to the changes noted in the discussion of the Administration. A copy of the final report is attached as Exhibit 3.

Legal Committee Report

There was no report as the Legal Committee lacked an assignment.

Old Business

Commissioner Pope stated that at least since the mid-1980's, Kansas has consistently voiced concerns and complaints about what they believe to be Nebraska's overuse of its allocation of water and the continued increase in consumptive use, especially due to ground water use.

New Business

No new business was reported.

Assignments to the Compact's Committees:

Engineering Committee

Commissioner Simpson suggested that they keep the assignment the same for the engineering committee. Commissioner Pope agreed as long as it is with the caveat that it's for general information purposes. The suggestion was made by Commissioner Simpson, seconded by Commissioner Pope and passed.

Legal Committee – No assignments were made to the Legal Committee.

Remarks from the Public

No remarks were received.

Future Meeting Arrangements

Chairman Patterson noted that according to the tradition of the Compact Administration, Nebraska would host the meeting next year. He suggested Alma, June 6th, and this date was accepted.

Adjournment

The meeting was adjourned at 11:30 a.m., June 7, 2001.

Roger K. Patterson
Nebraska Commissioner (Chairman)

Hal D. Simpson
Colorado Commissioner

David L. Pope
Kansas Commissioner

Exhibits

Exhibit #1 – Bureau of Reclamation report
Exhibit #2 – U.S. Geological Survey report
Exhibit #3 – Engineering Committee report

BUREAU OF RECLAMATION

OPERATION

AND

MAINTENANCE

REPORT

REPUBLICAN RIVER

COMPACT MEETING

MCCOOK, NEBRASKA

JUNE 7, 2001

REPUBLICAN RIVER COMPACT MEETING
June 7, 2001
McCook, Nebraska

2000 Operations

As shown on the attached Table 1, the precipitation in the Republican River Basin varied from 51 percent of normal at Lovewell Reservoir to 107 percent of normal at Harry Strunk Lake. Bonny, Harry Strunk, and Harlan County Lake received above normal precipitation. Total precipitation was below normal at the other reservoirs ranging from 14.39 inches at Lovewell Reservoir to 20.44 inches at Keith Sebelius Lake.

Inflows varied from 42 percent of the most probable forecast at Enders Reservoir to 167 percent of the most probable forecast at Keith Sebelius Lake. Inflows into Harlan County Lake were 134,191 AF and Lovewell Reservoir 81,773 AF. Inflows into Keith Sebelius were 7,659 AF which is more than one and a half times the expected most probable amounts.

Average farm delivery values for each irrigated acre are as follows:

District	Farm Delivery
Frenchman Valley	6.5 inches
H&RW	4.7 inches
Frenchman-Cambridge	11.5 inches
Almena	5.8 inches
Bostwick in NE	14.3 inches
Kansas-Bostwick	17.0 inches

2000 Operation Notes

Bonny Reservoir--Started the year 5.3 feet below the top of conservation. The January, November and December computed inflows at Bonny Reservoir were the lowest recorded for these months since construction. The end of year storage was the lowest recorded since construction.

Enders Reservoir--Started the year 17.4 feet below the top of conservation and the end of the year storage was the lowest ever recorded since construction.

Swanson, Hugh Butler, and Harry Strunk Lakes--Swanson and Hugh Butler started the irrigation season 8.8 feet and 3.0 feet below the top of conservation and Harry Strunk was 1.5 feet into the flood pool.

Keith Sebelius Lake--The total inflow of 7,659 AF was between the normal and wet-year forecasts. The reservoir started the irrigation season 2.9 feet below the top of conservation.

Harlan County Lake--Last year's high elevation was El. 1947.53 which is 1.5 feet into the flood pool. The lake finished the season at elevation 1936.94 (9.1 feet below full). Inflow for the year was 134,191 AF.

Lovewell Reservoir--The precipitation for last year was 51% of normal which was the lowest ever recorded. Last year's high elevation was El. 1583.28 which is .7 feet into the flood pool. The lake finished the year 2.9 feet below the top of active conservation. Diversions to the Courtland Canal were maintained through the end of the year to increase the reservoir storage.

Current Operations

Table 2 shows a summary of data for the first five months.

Bonny Reservoir--An Early Warning System (EWS) is operational and a Functional Exercise of the Emergency Action Plan (EAP) was conducted in September 2000. Bonny is presently 6.8 feet from full.

Swanson Lake--Presently 17.1 feet from full. Inflows for 2001 are only 58% of most probable. No releases are being made at the present time.

Enders Reservoir--The reservoir is 18.9 feet from full. Inflows for 2001 are only 63% of most probable.

A Safety of Dams Modification was deemed necessary to control seepage and improve the level of safety of the dam. Drilling and installation of new instrumentation was completed in 1999. An evaluation of the instrumentation data continues. Construction is expected this fall to install a filtered toe drain located in the existing open drain ditch.

Hugh Butler Lake--Presently 5.1 feet from full. No releases at this time.

A Safety of Dams corrective action study has been initiated to deal with seepage concerns. It is expected that construction will be done this fall to fill the open drainage trench at the downstream toe of the dam and also the installation of additional relief wells in the vicinity of the spillway area.

Harry Strunk Lake--Target elevation of 2 feet into the flood pool. Presently 1.0 feet into the flood pool. Uncontrolled releases are occurring through the spillway.

Keith Sebelius Lake--Presently 4.6 feet below full. No releases at this time.

Harlan County Lake--Presently .2 feet below full. No releases at this time. Inflow for 2001 is 130% of most probable.

Lovewell Reservoir--Presently 3.5 feet into the flood pool. Currently a flood release is being made and a release to the canal was started this week.

Other Items

Inspections

All of the dams will have annual inspections in 2001.

Emergency Management Operations

All of the NKAO dams now have an approved Emergency Action Plan (EAP) and a Tabletop Exercise has been conducted to test the plans. Annual Orientation Meetings will be held with the local Emergency Management personnel below Reclamation facilities to evaluate notification procedures. Radios to contact downstream 24-hr. warning points from the dams have been installed. They are to be tested on a monthly basis.

A Functional Exercise of the EAP for Bonny Dam was conducted in 2000 and a Functional Exercise of Enders Dam was conducted in May 2001. A Functional Exercise of Lovewell Dam will be held in September 2001.

Water Availability

Full supplies are available for the Bostwick Irrigation Districts. The Frenchman-Cambridge District will have an estimated 8-inch supply for the Meeker, Bartley, and Red Willow Canals and 9-inch supply available for the Cambridge Canal. The Almena District will deliver at least 5 inches. H&RW and Frenchman Valley Districts are expected to deliver 2.5 inches.

Sedimentation

A sedimentation re-survey was done for Keith Sebelius Lake in 2000 with new area-capacity data available in January 2002.

Water Conservation

Increased emphasis is being placed on water conservation by Reclamation. A full time employee is available in the Area Office to work with the irrigation districts on their water conservation efforts.

Security

The Department has placed a high priority on security of the numerous government facilities. We are presently conducting assessments and surveys of our facilities to determine what additional security measures are required. As a result of this there will likely be both structural and non-structural changes made at our facilities to ensure a proper level of security and safety.

Hydromet

Installation of hydromet instrumentation continues on all the canal diversion points and at other key locations on the distribution systems. We intend to have all of the canal sites in the basin installed in 2001. Several sites have equipment already installed and includes the Courtland, Culbertson, Cambridge, Bartley, Red Willow, Almena, Superior, Naponee, and Franklin Pump Canals. The data that is collected is transmitted via satellite and will be available on Reclamation's Internet site (www.gp.usbr.gov).

Other Reservoirs

Waconda Lake is 2.4 feet into the flood pool.

Exhibit #1

TABLE 1
NEBRASKA-KANSAS PROJECTS
Summary of Precipitation, Reservoir Storage and Inflows

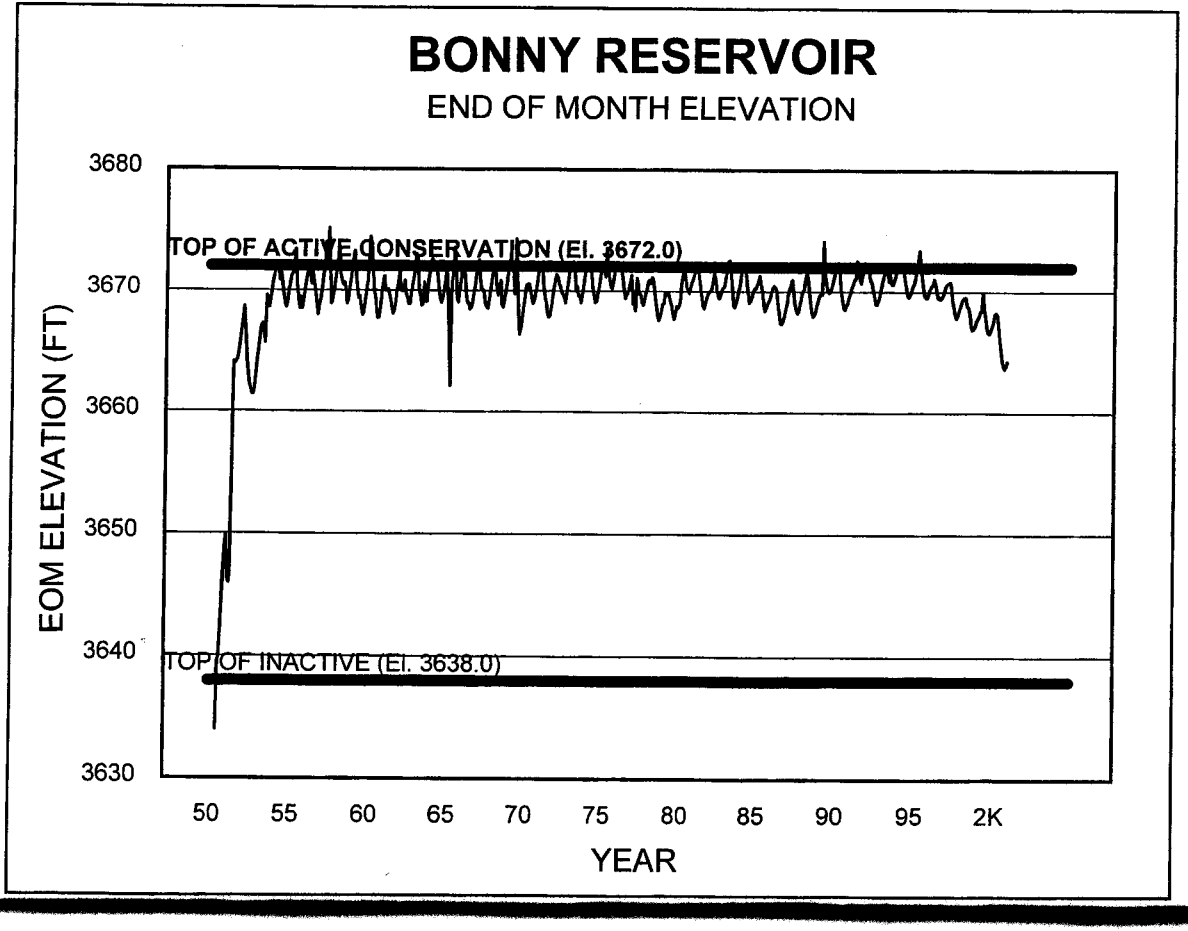
CALENDAR YEAR 2000

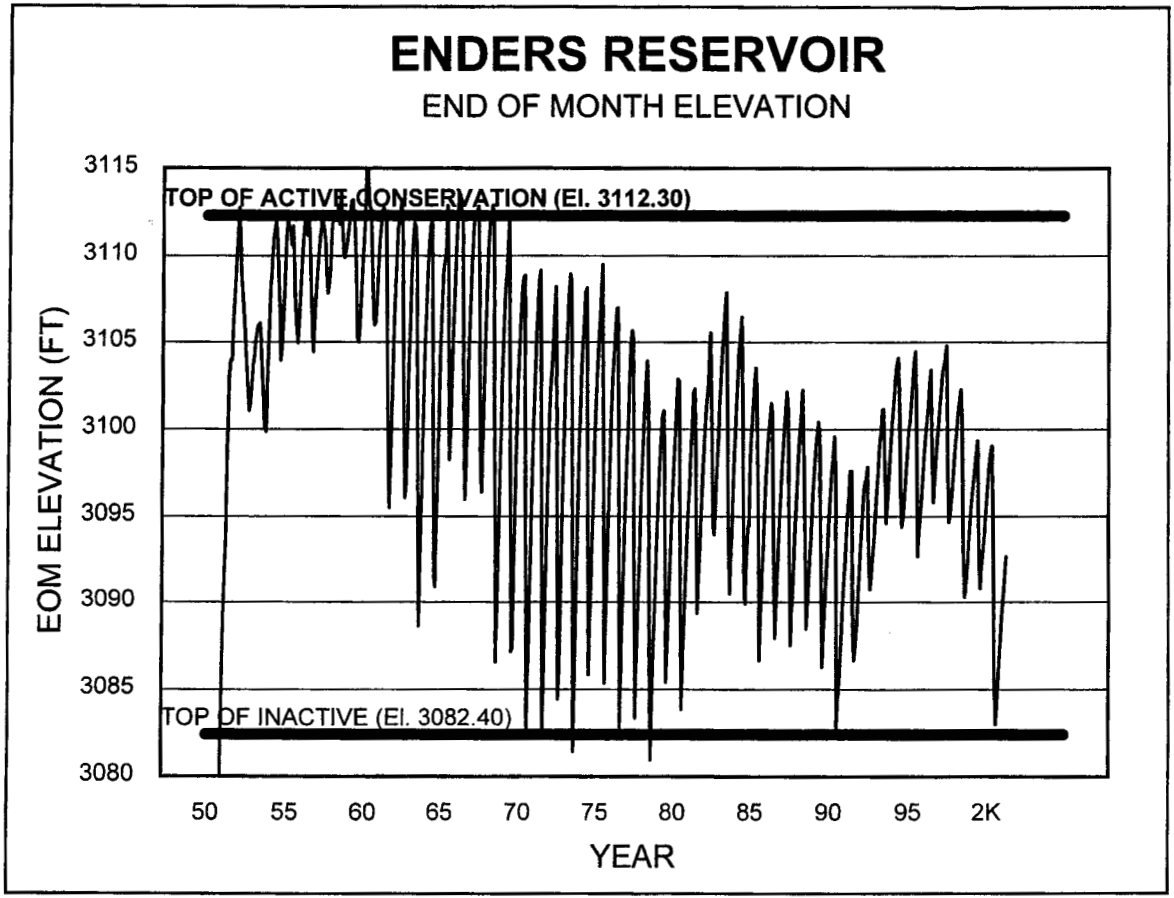
Reservoir	Total Precip. Inches	Percent Of Average %	Storage 12-31-99 AF	Storage 12-31-00 AF	Gain or Loss AF	Maximum Storage Content AF	Maximum Storage Date	Minimum Storage Content AF	Minimum Storage Date	Total Inflow AF	Percent Of Most Probable %
Box Butte	19.67	117	14,268	13,365	(903)	23,876	JUN 1	9,143	SEP 2	18,078	99
Merritt	18.07	91	69,110	68,560	(550)	76,254	MAY 21	30,002	SEP 9	187,178	106
Sherman	16.82	74	52,241	53,210	969	70,518	MAY 30	34,910	SEP 2	112,674	101
Calamus	21.40	91	83,949	98,211	14,262	128,943	MAY 23	58,941	OCT 22	273,291	110
Davis Creek	17.56	76	20,132	21,755	1,623	31,466	JUN 13	18,111	APR 17	54,424	114
Bonny	17.78	104	31,423	26,516	(4,907)	34,282	MAY 9	26,180	NOV26	10,051	59
Enders	17.07	91	19,106	13,075	(6,031)	23,909	JUN 1	8,967	AUG 10	12,863	42
Swanson	16.48	82	53,392	25,752	(27,640)	73,332	MAY 11	24,621	OCT 21	30,907	48
Hugh Butler	18.24	92	28,533	23,514	(5,019)	31,558	MAY 8	21,523	SEP 18	13,226	71
Harry Strunk	22.17	107	34,187	25,272	(8,915)	38,474	MAY 9	16,415	AUG 25	36,006	87
Keith Sebelius	20.44	83	28,234	22,901	(5,333)	29,992	APR 2	22,419	OCT 21	7,659	167
Harlan County	23.20	102	292,312	214,988	(77,324)	336,016	MAY 18	202,386	OCT 20	134,191	97
Lovewell	14.39	51	17,807	27,587	9,780	37,732	MAY 12	13,709	SEP 1	81,773	102
Kirwin	18.58	79	94,346	73,758	(20,588)	104,885	MAY 11	73,122	OCT 20	22,141	132
Webster	20.29	86	75,781	56,668	(19,113)	85,117	MAY 31	56,668	DEC 3	21,729	172
Waconda	16.89	65	233,679	198,056	(35,623)	234,173	MAY 27	194,481	OCT 12	88,839	91
Cedar Bluff	24.61	119	181,748	178,912	(2,836)	194,570	JUL 22	178,708	OCT 20	41,521	500

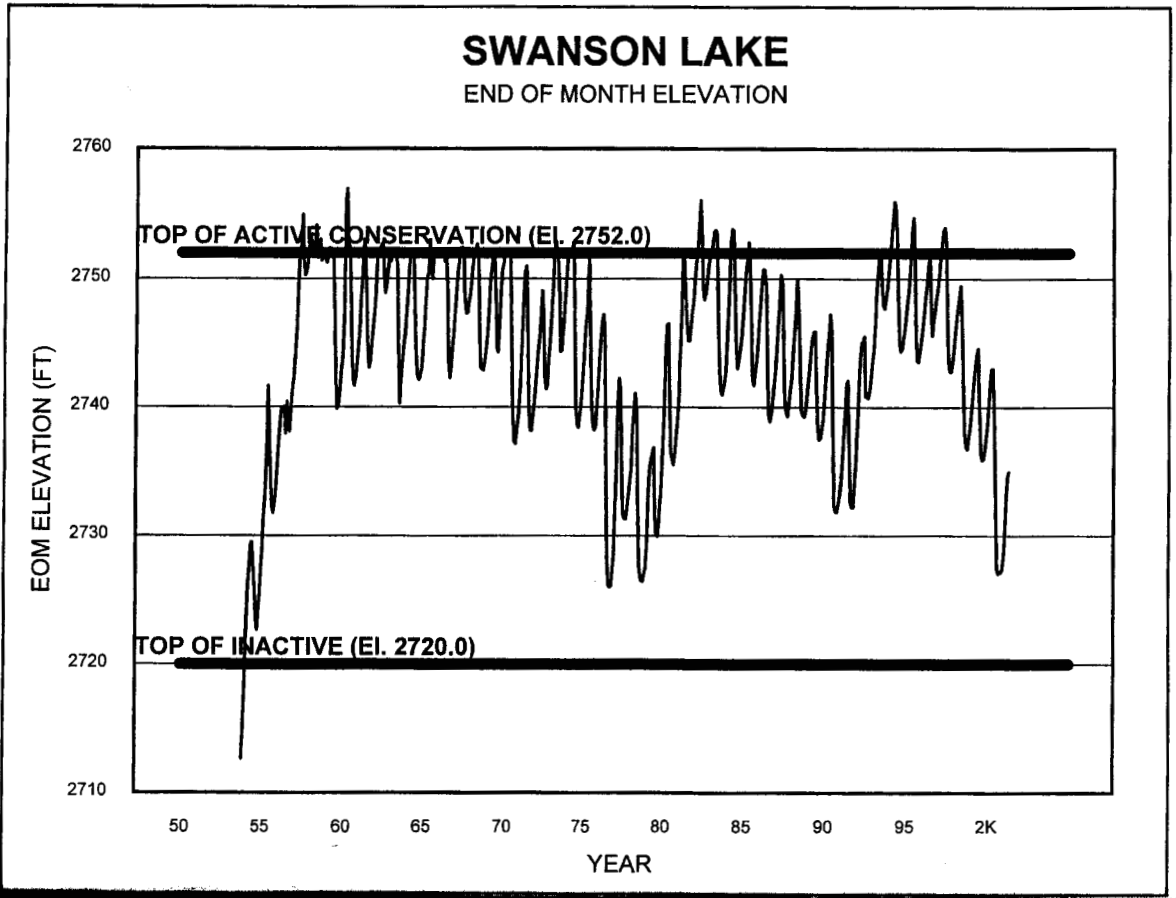
TABLE 2
NEBRASKA-KANSAS AREA OFFICE
Summary of Precipitation, Reservoir Storage and Inflows

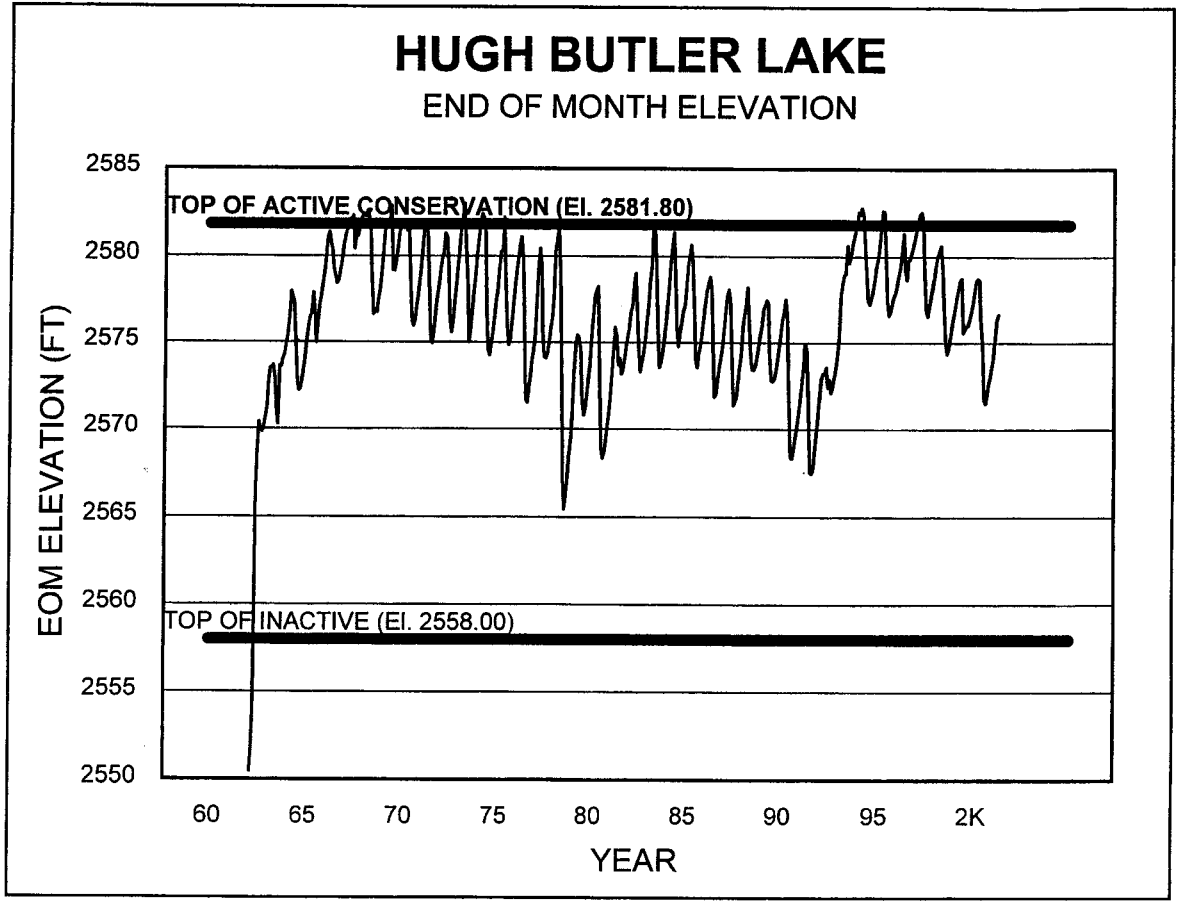
JANUARY - MAY 2001

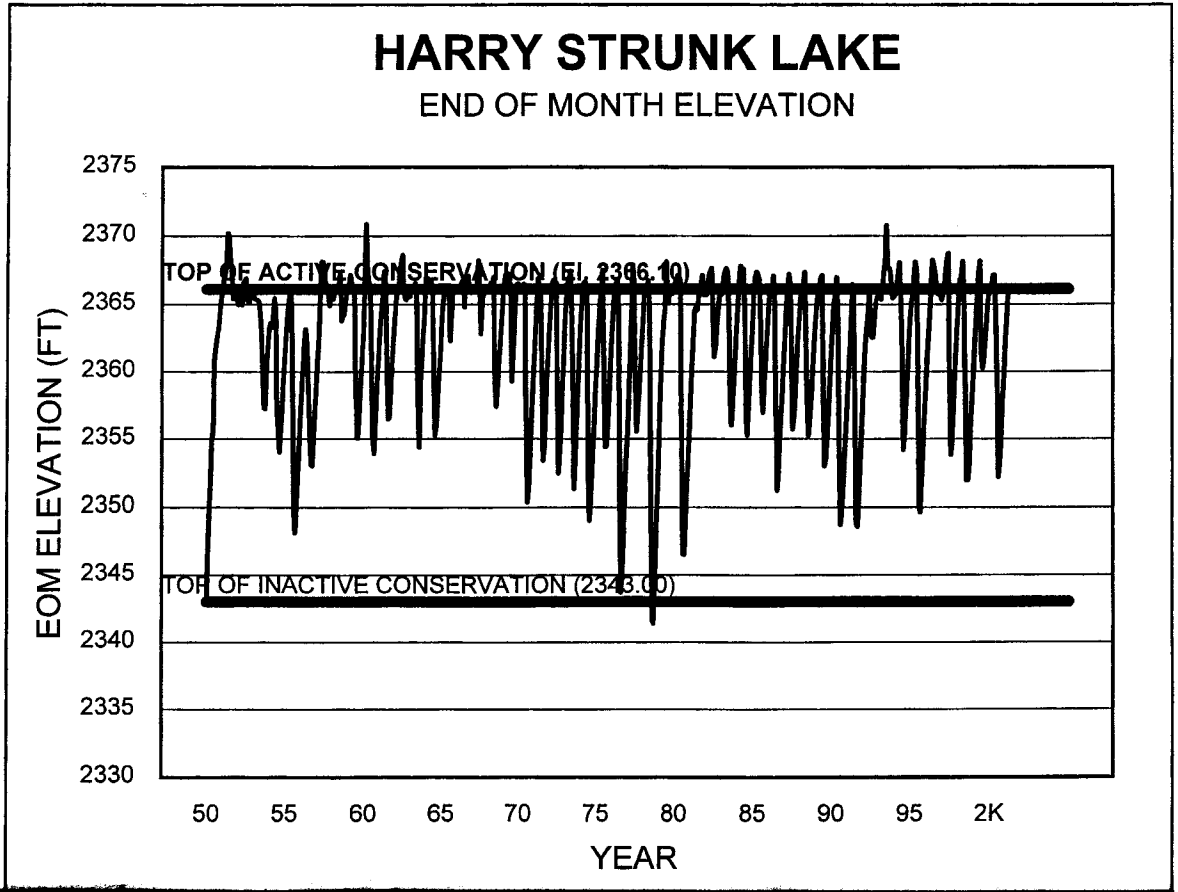
Reservoir	Precip. Inches	Percent Of Average %	Storage 05-31-00 AF	Storage 05-31-01 AF	Gain or Loss AF	Inflow AF	Percent Of Most Probable %
Bonny	5.85	90	33,887	28,773	(5,114)	6,000	66
Enders	6.97	101	23,825	17,504	(6,321)	5,600	63
Swanson	7.06	98	72,552	45,120	(27,432)	22,500	58
Hugh Butler	6.91	103	31,302	28,391	(2,911)	7,500	87
Harry Strunk	7.83	107	37,699	37,221	(478)	19,900	110
Keith Sebelius	12.52	140	29,472	26,017	(3,455)	5,300	183
Harlan County	13.04	164	333,007	306,001	(27,006)	103,100	130
Lovewell	16.21	171	37,117	45,619	8,502	25,100	143
Kirwin	13.72	156	104,567	87,052	(17,515)	17,700	175
Webster	10.57	120	85,117	70,778	(14,339)	17,400	198
Waconda	12.15	135	233,922	256,208	22,286	85,700	137
Cedar Bluff	9.33	126	189,030	183,523	(5,507)	12,900	253

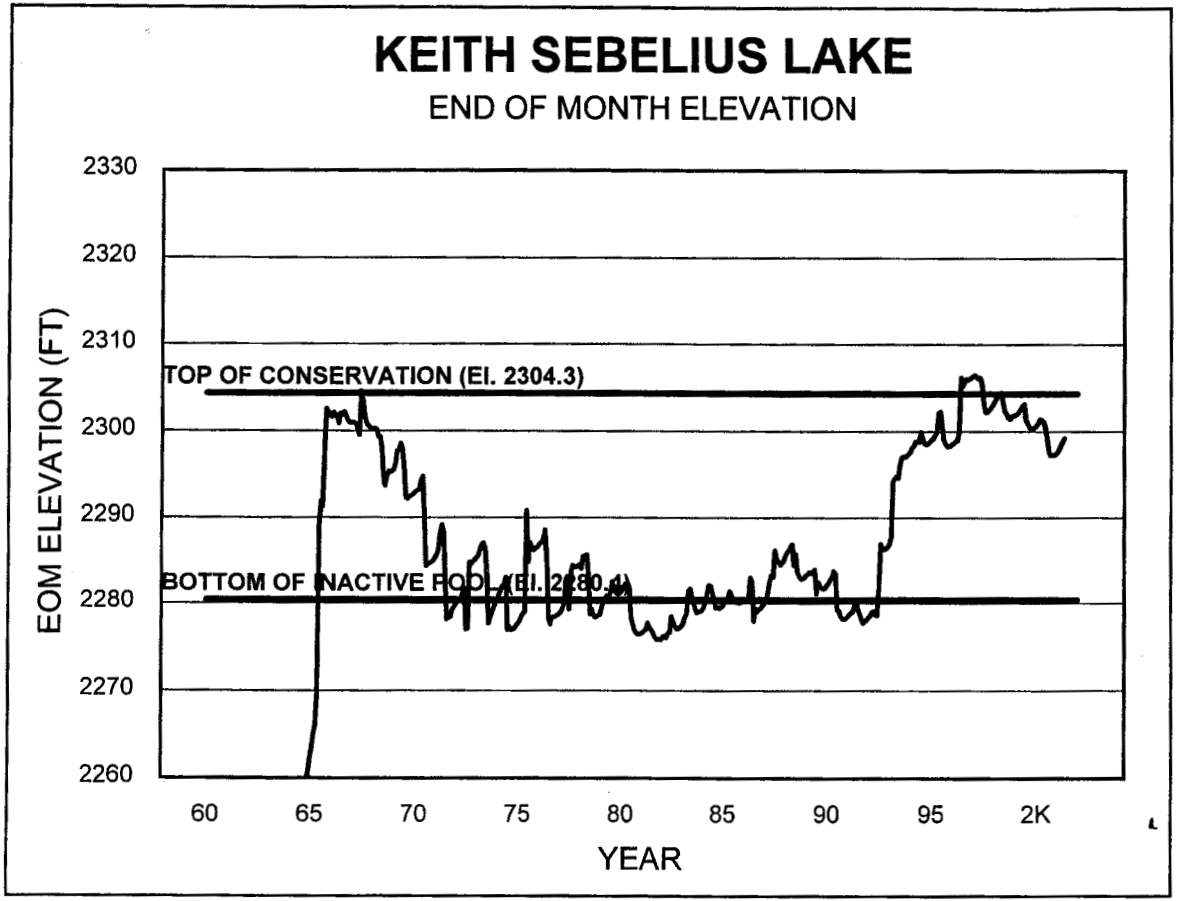

BONNY RESERVOIR
END OF MONTH ELEVATION
EOM ELEVATION (FT)
3680
3670
3660
3650
3640
3630
TOP OF ACTIVE CONSERVATION (El. 3672.0)
TOP OF INACTIVE (El. 3638.0)
50
55
60
65
70
75
80
85
90
95
2K
YEAR


ENDERS RESERVOIR
END OF MONTH ELEVATION
TOP OF ACTIVE CONSERVATION (El. 3112.30)
TOP OF INACTIVE (El. 3082.40)
EOM ELEVATION (FT)
3115
3110
3105
3100
3095
3090
3085
3080
50
55
60
65
70
75
80
85
90
95
2K
YEAR


SWANSON LAKE
END OF MONTH ELEVATION
TOP OF ACTIVE CONSERVATION (El. 2752.0)
TOP OF INACTIVE (El. 2720.0)
EOM ELEVATION (FT)
2760
2750
2740
2730
2720
2710
50
55
60
65
70
75
80
85
90
95
2K
YEAR

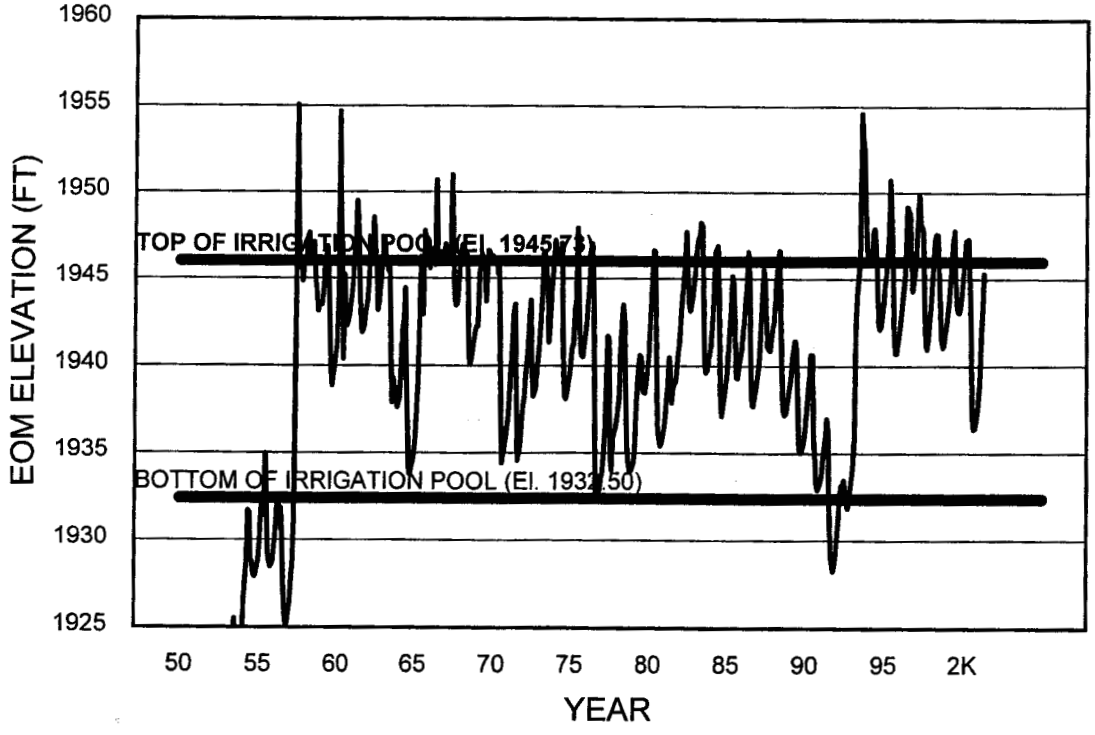

HUGH BUTLER LAKE
END OF MONTH ELEVATION
TOP OF ACTIVE CONSERVATION (El. 2581.80)
TOP OF INACTIVE (El. 2558.00)
EOM ELEVATION (FT)
2585
2580
2575
2570
2565
2560
2555
2550
60
65
70
75
80
85
90
95
2K
YEAR

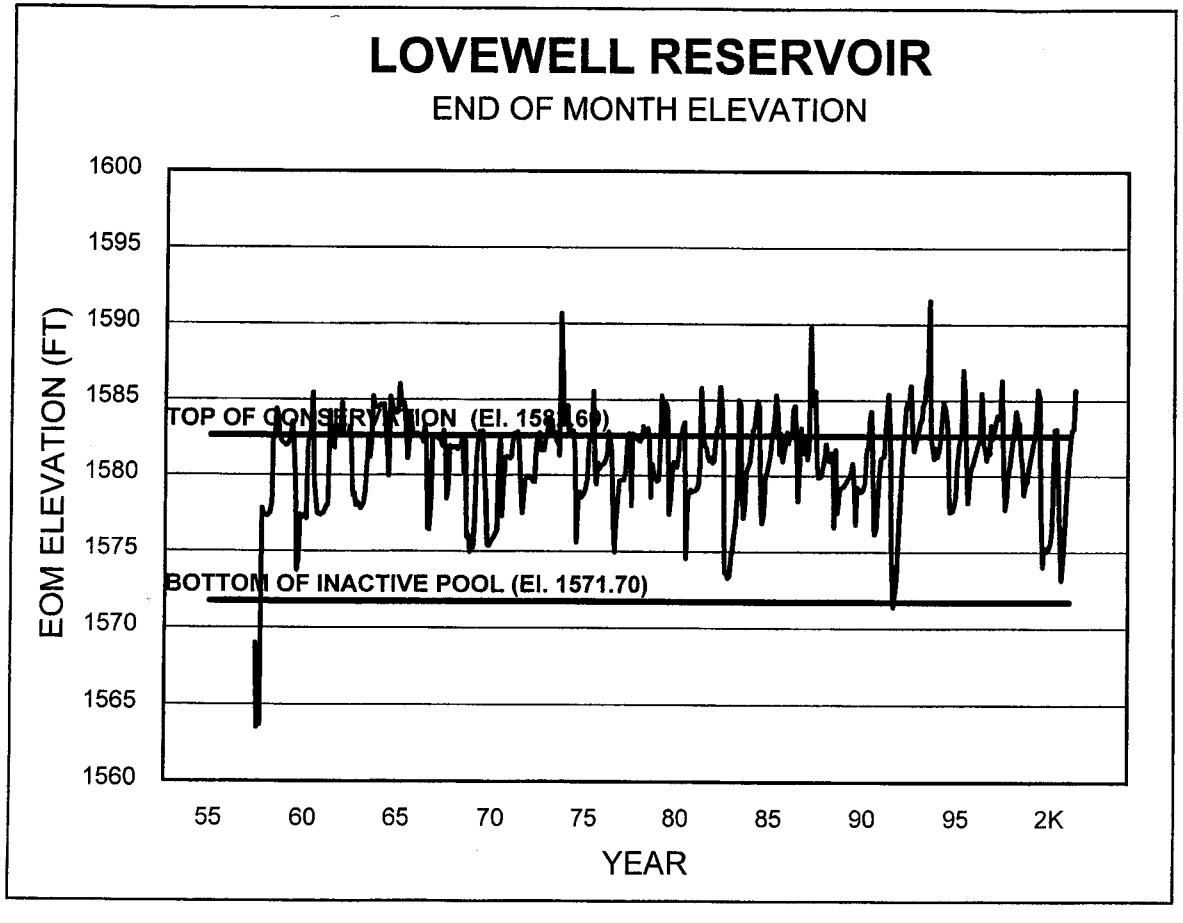

HARRY STRUNK LAKE
END OF MONTH ELEVATION
EOM ELEVATION (FT)
2375
2370
2365
2360
2355
2350
2345
2340
2335
2330
TOP OF ACTIVE CONSERVATION (El. 2366.10)
TOP OF INACTIVE CONSERVATION (2343.00)
50
55
60
65
70
75
80
85
90
95
2K
YEAR


KEITH SEBELIUS LAKE
END OF MONTH ELEVATION
EOM ELEVATION (FT)
2330
2320
2310
2300
2290
2280
2270
2260
TOP OF CONSERVATION (El. 2304.3)
BOTTOM OF INACTIVE POOL (El. 2280.4)
60
65
70
75
80
85
90
95
2K
YEAR

HARLAN COUNTY LAKE

END OF MONTH ELEVATION




LOVEWELL RESERVOIR
END OF MONTH ELEVATION
EOM ELEVATION (FT)
1600
1595
1590
1585
1580
1575
1570
1565
1560
TOP OF CONSERVATION (El. 1583.60)
BOTTOM OF INACTIVE POOL (El. 1571.70)
55
60
65
70
75
80
85
90
95
2K
YEAR

Republican River Compact Report
U.S. Geological Survey
June 7, 2001

The U.S. Geological Survey, Nebraska District, receives funding through the Federal Collection of Basic Records program in support of compacts for 10 streamflow stations in the Republican River Basin, 9 of which have real-time data collection platforms (DCPs), listing attached. The last site, Buffalo Cr. at Haigler, will have a DCP installed in 2001. The Nebraska Department of Natural Resources(DNR) provides coop funds to the USGS to operate one additional station, funding also shared by the Corps of Engineers, and for USGS review and publishing of records at three other sites that DNR operates. All four of these sites have DCPs. The Corps of Engineers provides funds for the one site shared with DNR and complete funding for three other stations. They also provide funding for the operation of four additional DCP's at sites other than those four. In summary, the Nebraska District operates 14 stations in the basin, reviews and publishes 3 others, and maintains 15 DCP's for real-time data transmission. The Bureau of Reclamation maintains a DCP at Courtland Canal at NE-KS State Line which the USGS also uses for record collection. The real-time information can be accessed at:

http://www-ne.cr.usgs.gov/rt-cgi/gen_tbl_pg

or at the USGS National WEB site at:

http://water.usgs.gov/ne/nwis

The Kansas District, USGS, operates gages on Sappa Creek, Beaver Creek, and Prairie Dog Creek in Kansas, and at Republican River nr Hardy, NE.

Mean streamflow for WY2000 was less than the mean flow for the period of record at all sites examined except for the Courtland Canal. Lowest annual means for period of record occurred at North Fork Republican River at CO-NE State Line, Rock Creek at Parks, South Fork Republican River near Benkelman and Frenchman Creek at Culbertson.

Annual mean flow at most streamgaging sites was less than the 25-percent quartile point of annual flows which indicates they were less than the normal range of flow. The annual mean flows at Red Willow nr Red Willow, NE, Sappa Creek nr Stamford, NE and Prairie Dog Creek nr Woodruff, KS were in the normal range although less than median (between 25 to 50%). The annual mean flow at Courtland Canal at NE-KS State Line was the 3rd highest for period of record.

The WY2000 records and graphical presentations were provided to the Engineering Committee of the Compact and the records are published in the Water Resources Data Report for Nebraska for WY2000.

Exhibit #2

Report of the Engineering Committee
For the Republican River Compact Administration
June 7, 2001

At the 2000 annual meeting of the Republican River Compact Administration, the Commissioners assigned the Engineering Committee to compile the following data for publication in the Republican River Compact Annual Report.

1. The annual discharge for the last 10 years, the long term mean discharge for the gage and the mean discharge since most projects in the basin were completed for the following gages:
   Arikaree River at Haigler, Nebraska;
   North Fork Republican River at Colorado-Nebraska State line;
   Buffalo Creek near Haigler, Nebraska;
   Rock Creek at Parks, Nebraska;
   South Fork Republican River near Benkelman, Nebraska;
   Frenchman Creek at Culbertson, Nebraska;
   Driftwood Creek near McCook, Nebraska;
   Red Willow Creek near Red Willow, Nebraska;
   Medicine Creek below Harry Strunk Lake, Nebraska;
   Beaver Creek near Beaver City, Nebraska;
   Sappa Creek near Stamford, Nebraska;
   Prairie Dog Creek near Woodruff, Kansas;
   Courtland Canal at Nebraska-Kansas State line;
   Republican River near Hardy, Nebraska.

2. The inflow and outflow to canals for the Bureau of Reclamation's Republican River basin projects (Bonny, Enders, Swanson, Hugh Butler, Harry Strunk, Lovewell) and Harlan County Reservoir.

3. The water diverted in water year 2000 from major Bureau of Reclamation canals and from Hale, Pioneer and Laird Ditches in Colorado.

4. Precipitation records from the Bureau of Reclamation reservoir sites and any additional precipitation the Engineering Committee determined to be useful.

Data for all gages except Medicine Creek below Harry Strunk Lake and Beaver Creek near Beaver City in task number 1 were provided to the Engineering Committee by Glenn Engel from the U. S. Geological Survey, Nebraska District. The data for Medicine Creek below Harry Strunk Lake and for Beaver Creek near Beaver City came from the Nebraska Department of Natural Resources. Data for items 2, 3 and 4 were provided by Marvin R. Swanda, from the U. S. Bureau of Reclamation, Nebraska-Kansas Area Office, with the exception of data for the Hale, Pioneer and Laird Ditches and non-Bureau of Reclamation precipitation stations, which were provided by the Office of the Colorado State Engineer and the Kansas Division of Water Resources.

For task number 1 the long term average for the basin since most major surface water development was completed in the basin was calculated using the water years 1964-2000, inclusive. For each individual basin, the long term average was for all years for which the gaging record was complete, unless the gage was below an on-stream reservoir or major diversion dam, in which case the average was for the years since the completion of the structure.

Last year the Engineering Committee also requested the representatives of U.S. Geological Survey and the U. S. Bureau of Reclamation, who have traditionally provided additional relevant data to the Compact Administration, to continue to provide these data for publication in the annual report.

The Engineering Committee held a telephone conference call to review the assignment on March 29th, 2001 and completed the assignment during a conference call on May 24th, 2001. The requested data are shown in the tables and charts attached to this report in Appendices A Stream Data, B Reservoir, Canal, and District Data, and C Precipitation Data.

This report is provided for general information purposes only and is not intended for use in determining compact compliance.

Respectfully submitted:

Ann Salomon Bleed, Nebraska

Jeff Shafer, Nebraska

David W. Barfield, Kansas

Scott Ross, Kansas

Richard Stenzel, Colorado

Kenneth W. Knox, Colorado

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Appendix A

06821500 ARIKAREE RIVER AT HAIGLER, NE

LOCATION.--Lat 40°01'45", long 101°58'10", in NE $^1/_4$ NE $^1/_4$ sec.29, T.1 N., R.41 W., Dundy County, 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^2, of which about 1,020 mi^2 contributes directly to surface runoff.

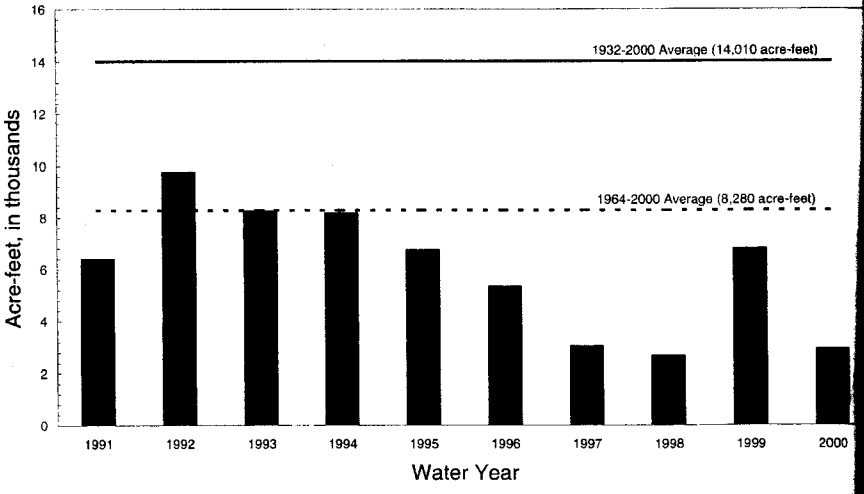
PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1310.

REMARKS.--Record fair except for estimated period, which is poor. Natural flow affecte by ground-water withdrawals and diversions for irrigation of about 1,500 acres in Colorado and by return flow from Haigler Canal.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SE
TOTAL	197.6	29.10	30.32	116.2	159.7	365.9	258.7	155.50	3.18	78.62	30.04	52.
MEAN	6.37	.97	.98	3.75	5.51	11.8	8.62	5.02	.11	2.54	.97	1.
MAX	10	6.2	2.9	7.5	8.1	56	24	29	.61	39	5	
MIN	4.1	.65	.45	1.2	3.6	4.2	2.4	.69	.00	.00	.00	
AC-FT	392	58	60	230	317	726	513	308	6.3	156	60	

WY00 Total 1477.51 Mean 4.04 Max 56 Min .00 Acre-Feet 2930

Arikaree River at Haigler
Total Annual Discharge



06823000 NORTH FORK REPUBLICAN RIVER AT COLORADO-NEBRASKA STATE LINE

LOCATION.--Lat 40°04'10", long 102°03'05", in SE $^1/_4$ NW $^1/_4$ sec.10, T.1 N., R.42 W., Dundy County, Nebraska, 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^2, of which about 174 mi^2 contributes directly to surface runoff.

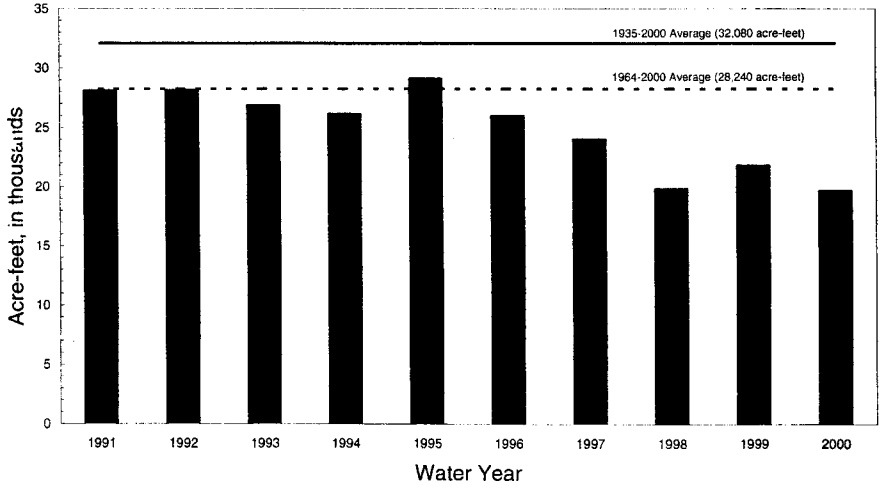
PERIOD OF RECORD.--October 1930 to current year. Prior to October 1932, published as North Fork of Arikaree River at Colorado-Nebraska State line. Monthly discharge only for some periods, published in WSP 1310.

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

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	905	1311	1306	1327	1386	1553	941.7	224.4	185.5	245.7	208.2	325.4
MEAN	29.2	43.7	42.1	42.8	47.8	50.1	31.4	7.24	6.18	7.93	6.72	10.8
MAX	41	47	48	45	58	72	48	13	14	43	9.3	25
MIN	20	34	36	41	42	42	9.7	5.4	3.6	2.6	5.0	5.4
AC-FT	1800	2600	2590	2630	2750	3080	1870	445	368	487	413	645

Water Year 00 Total 9918.9 Mean 27.1 Max 72 Min 2.6 Acre-Feet 19670

North Fork Republican River at CO-NE State Line
Total Annual Discharge



06823500 BUFFALO CREEK NEAR HAIGLER, NE

LOCATION.--Lat 40°02'22", long 101°51'57", in SE $^1/_4$ NW $^1/_4$ sec.20, T.1 N., R.40 W., Dundy County, Hydrologic Unit 10250002, on upstream side of bridge, 0.4 mi upstream from mouth, and 4 mi northeast of Haigler.

DRAINAGE AREA.--172 mi^2, of which about 8.6 mi^2 contributes directly to surface runoff.

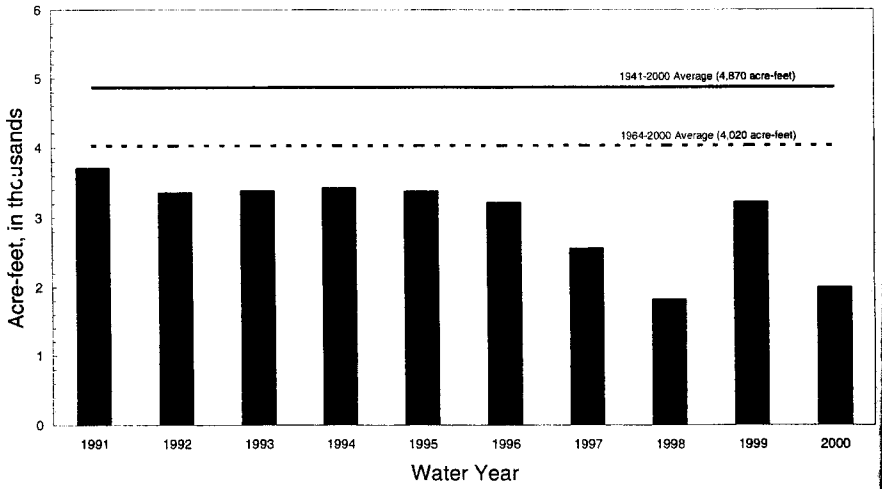
PERIOD OF RECORD.--October 1940 to current year.

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

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	130.6	58.64	138.1	159.1	96.6	145.5	111.7	127.50	24.81	0.00	0.00	12.1
MEAN	4.21	1.95	4.45	5.13	3.33	4.69	3.72	4.11	.83	.000	.000	.4
MAX	6.0	3.6	5.7	6.0	5.2	6.0	11	9.9	4.1	.00	.00	3.9
MIN	2.4	.59	2.9	4.5	2.9	3.5	1.9	.70	.00	.00	.00	.00
AC-FT	259	116	274	316	192	289	222	253	49	.00	.00	24

Water Year 00 Total 1004.74 Mean 2.75 Max 11 Min .00 Acre-Feet 1990

Buffalo Creek near Haigler
Total Annual Discharge



06824000 ROCK CREEK AT PARKS, NE

LOCATION.--Lat 40°02'30", long 101°43'40", in SW $^1/_4$ NE $^1/_4$ sec.21, T.1 N., R.39 W., Dundy County, Hydrologic Unit 10250002, on right bank at west edge of Parks, 100 ft downstream from county road bridge and 0.6 mi upstream from mouth.

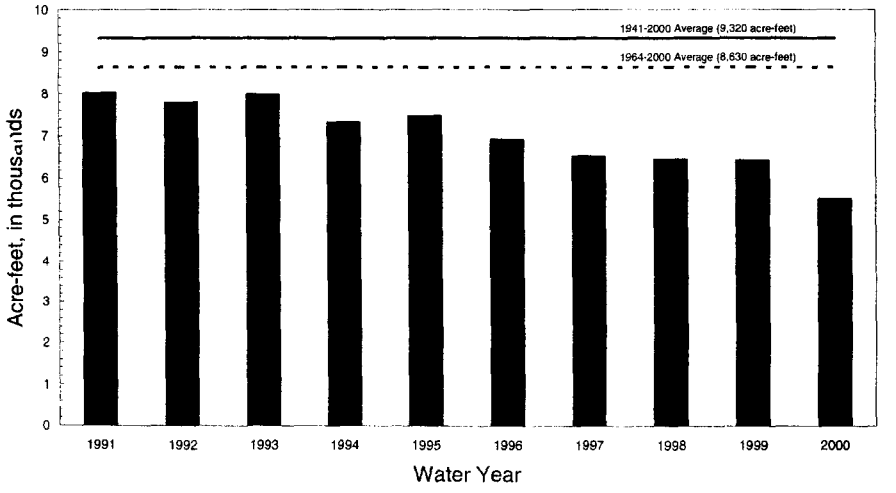
DRAINAGE AREA.--23.6 mi^2, of which about 20 mi^2 contributes directly to surface runoff.

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

REMARKS.--Records fair except for periods of estimated record, 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.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	280.2	196.0	249.8	293.1	265.6	287.1	258.9	183.0	191.7	190.8	191.8	182.7
MEAN	9.04	6.53	8.06	9.45	9.16	9.26	8.63	5.90	6.39	6.15	6.19	6.09
MAX	9.9	9.5	9.5	10	10	11	12	11	7.5	12	9.2	9.8
MIN	8.7	5.7	6.4	8.3	8.2	8.1	7.5	4.2	5.3	2.7	4.8	4.2
AC-FT	556	389	495	581	527	569	514	363	380	378	380	362

Water Year 00 Total 2770.7 Mean 7.57 Max 12 Min 2.7 Acre-Feet 5500



06827500 SOUTH FORK REPUBLICAN RIVER NEAR BENKELMAN, NE

LOCATION (REVISED).--Lat 40°00'34", long 101°32'32", in NE $^{1}/_{4}$ SW $^{1}/_{4}$ sec.31, T.1 N., R.37 W., Dundy County, Hydrologic Unit 10250003, on right bank at downstream side of bridge on State Highway 61, 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^2, approximately, of which about 2,190 mi^2 contributes directly to surface runoff.

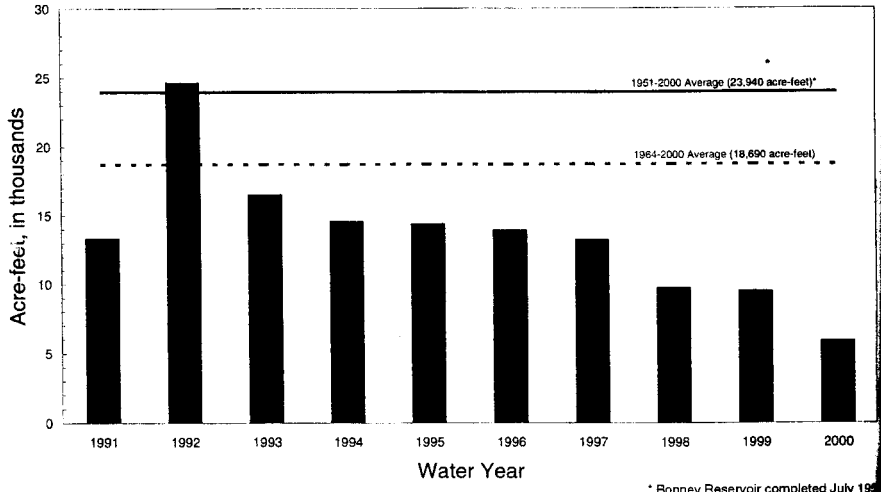
PERIOD OF RECORD.--October 1894 to September 1895, October 1902 to November 1906, October 1930 to September 1932, August 1937 to current year. Published as South Fork of Republican River at Benkelman prior to 1906 and as Republican River at Benkelman 1931-32. Monthly discharge only for some periods,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

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

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	0.00	258.2	250.4	385.1	487	670	541	353.4	12.38	0.00	0.00	0.00
MEAN	.000	8.61	8.08	12.4	16.8	21.6	18.0	11.4	.41	.000	.000	.000
MAX	.00	15	12	17	20	25	25	19	2.8	.00	.00	.00
MIN	.00	.00	5.8	9.6	15	18	14	3.3	.00	.00	.00	.00
AC-FT	.00	512	497	764	966	1330	1070	701	25	.00	.00	.00

Water Year 00 Total 2957.48 Mean 8.08 Max 25 Min .00 Acre-Feet 5870

South Fork Republican River near Benkelman
Total Annual Discharge



* Bonney Reservoir completed July 19

06835500 FRENCHMAN CREEK AT CULBERTSON, NE

LOCATION.--Lat 40°14'05", long 100°52'40", in SW $^{1}/_{4}$ SE $^{1}/_{4}$ sec. 12, T.3 N., R.32 W., Hitchcock County, 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^2, of which about 1,590 mi^2 contributes directly to surface runoff.

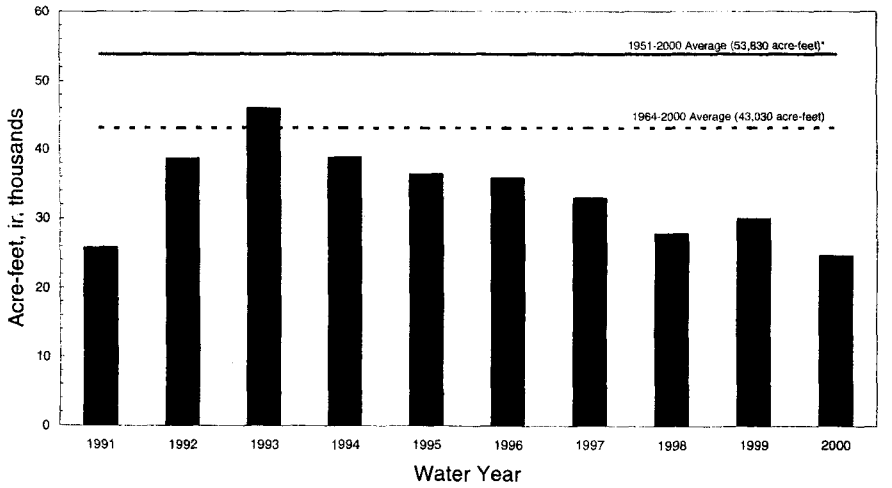
PERIOD OF RECORD.--June 1913 to September 1915 (gage heights and discharge measurements only), October 1930 to current year. Published as Frenchman River at Culbertson October 1965 to September 1972. Monthly discharge only for some periods, published in WSP 1310.

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

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	1544	1663	1809	1784	1730	2022	1103	591.3	137.1	33.72	4.87	1.04
MEAN	49.8	55.4	58.4	57.5	59.7	65.2	36.8	19.1	4.57	1.09	.16	.035
MAX	60	58	59	61	64	70	70	26	6.5	3.3	2.6	.28
MIN	47	53	55	51	55	60	22	9.3	3.4	.00	.00	.00
AC-FT	3060	3300	3590	3540	3430	4010	2190	1170	272	67	9.7	2.1

Water Year 00 Total 12423.03 Mean 33.9 Max 70 Min .00 Acre-Feet 24640

Frenchman Creek at Culbertson
Total Annual Discharge



* Enders Reservoir completed October 1951

06836500 DRIFTWOOD CREEK NEAR MCCOOK, NE

LOCATION.--Lat 40°08'45", long 100°40'22", in SW $^1/_4$ SE $^1/_4$ sec.11, T.2 N., R.30 W., Red Willow County, Hydrologic Unit 10250004, on right bank downstream from county road bridge, 5.8 mi upstream from mouth, and 3.5 mi southwest of McCook.

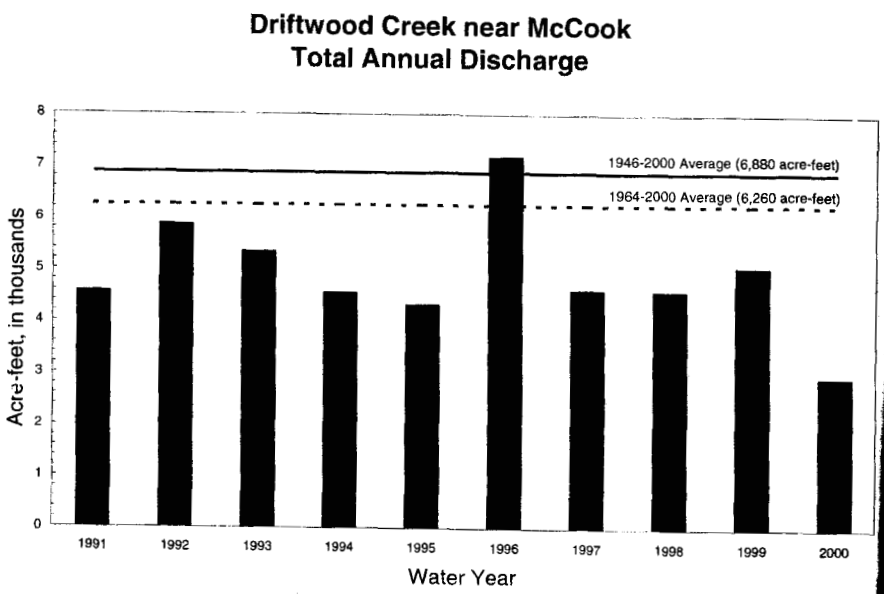
DRAINAGE AREA.--361 mi^2, of which about 351 mi^2 contributes directly to surface runoff.

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

REMARKS.--Records fair. Natural flow affected by waste from Meeker-Driftwood Canal and by irrigation development above station.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	111.6	108.2	127.1	135.0	133.5	146.8	116.5	90.5	104.9	181.1	152.9	67.3
MEAN	3.60	3.61	4.10	4.35	4.60	4.74	3.88	2.92	3.50	5.84	4.93	2.24
MAX	5.1	3.9	4.4	4.5	5.3	5.6	4.3	3.4	5.8	7.2	6.2	2.7
MIN	3.3	3.4	3.8	4.2	4.2	4.3	3.3	2.4	2.3	4.6	2.7	1.9
AC-FT	221	215	252	268	265	291	231	180	208	359	303	133

Water Year 00 Total 1475.4 Mean 4.03 Max 7.2 Min 1.9 Acre-Feet 2930



06838000 RED WILLOW CREEK NEAR RED WILLOW, NE

LOCATION.--Lat 40°14'10", long 100°30'00", in NE $^1/_4$ NE $^1/_4$ sec.17, T.3 N., R.28 W., Red Willow County, 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 mi^2, of which about 405 mi^2 contributes directly to surface runoff.

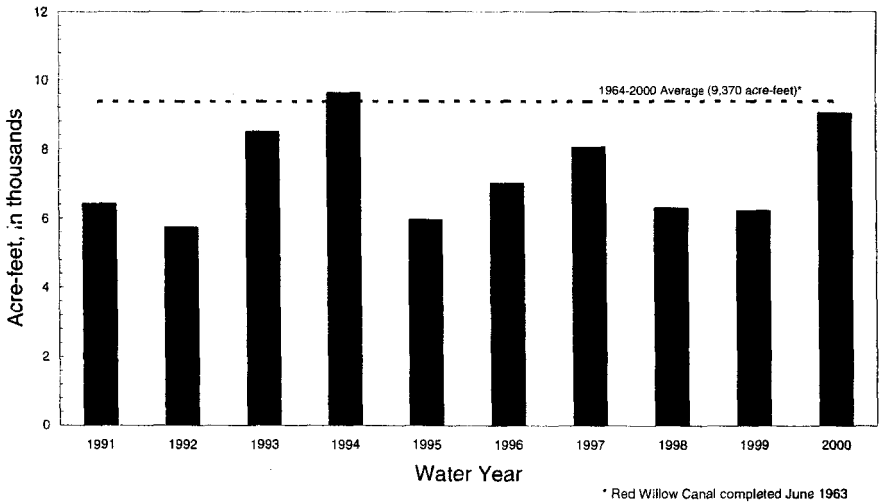
PERIOD OF RECORD.--September 1939 to current year.

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

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	181.1	233.6	233.7	175.8	246.1	302.5	285.6	274.8	567.32	1049.1	826.23	171.4
MEAN	5.84	7.79	7.54	5.67	8.49	9.76	9.52	8.86	18.9	33.8	26.7	5.71
MAX	7.4	8.5	9.8	8.4	9.6	12	11	10	94	497	72	16
MIN	3.8	7.1	5.4	3.6	5.4	8.3	8.1	7.7	.07	2.4	.43	4.1
AC-FT	359	463	464	349	488	600	566	545	1130	2080	1640	340

Water Year 00 Total 4547.25 Mean 12.4 Max 497 Min .07 Acre-Feet 9020

Red Willow Creek near Red Willow
Total Annual Discharge



* Red Willow Canal completed June 1963

06842500 MEDICINE CREEK below Harry Strunk Lake

LOCATION.--Center of Sec. 25-5-26 W., Frontier County, Latitude 40° 22' 20", Longitude 100° 13' 20", On left bank 0.5 mile downstream from Medicine Creek Dam and 6.5 miles northwest of Cambridge.

DRAINAGE AREA.--880 square miles, of which 640 square miles contributes directly to surface runoff. This drainage controlled by Medicine Creek Dam 1/2 mile upstream.

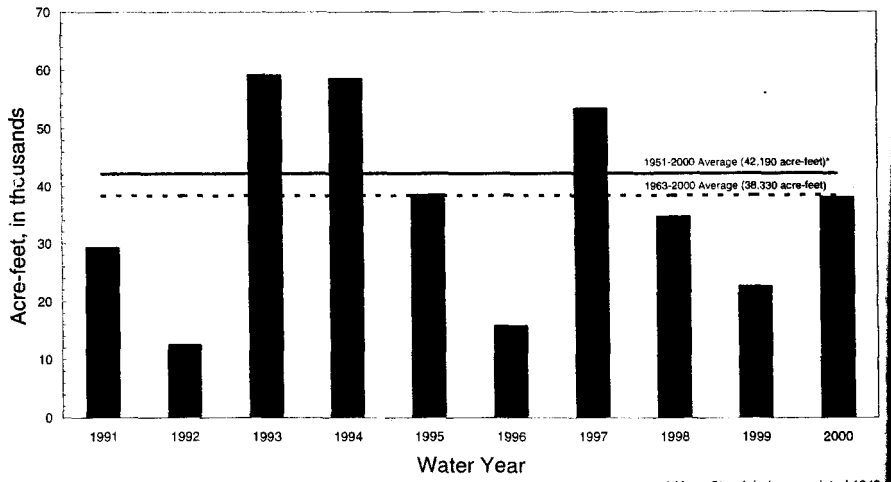
PERIOD OF RECORD.--1949 - present (Monthly discharge only for some periods, published in WSP 1730).

REMARKS.--Published by U. S. Geological Survey up to Oct. 1, 1994. Records above 5 cubic feet per second are good, estimated records are fair, records below 5 cubic feet per second are poor.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	7.72	23.77	23.46	979.84	1362	1491	552.1	1200.6	3576	4509	5400.85	23.02
MEAN	.25	.79	.76	31.6	47.0	48.1	18.4	38.7	119	145	174	.77
MAX	.33	1.6	1.3	49	49	49	49	66	209	278	300	1.4
MIN	.19	.25	.32	.49	45	46	1.5	1.5	64	44	.71	.17
AC-FT	15	47	47	1940	2700	2960	1100	2380	7090	8940	10710	46

Water Year 00 Total 19149.36 Mean 52.3 Max 300 Min .17 Acre-Feet 37980

Medicine Creek below Harry Strunk Lake
Total Annual Discharge



* Harry Strunk Lake completed 1949

06847000 BEAVER CREEK near Beaver City

LOCATION.--SW1/4SW1/4 Sec. 23-2-23 W., Furnas County, Lat. 40° 07' 12", Long. 99° 53' 35", on left bank 400 feet downstream from bridge on U.S. Highway 283, 0.75 mile south of State Highway 89, and 3.5 miles west of Beaver City, and 25.5 miles above the mouth.

DRAINAGE AREA.--2,081 square miles, approximately 1,650 square miles contributes directly to surface runoff.

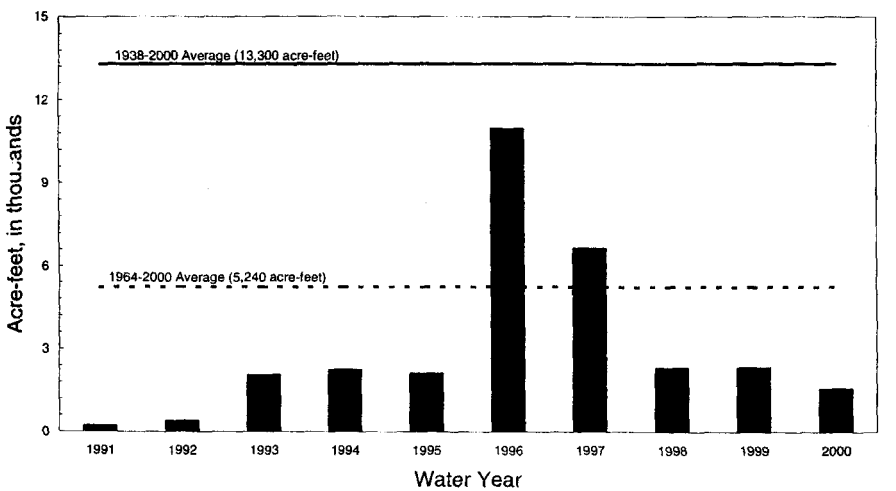
PERIOD OF RECORD.--1936 - present (Some records are monthly discharge only, published in WSP 1310).

REMARKS.--Published by U. S. Geological Survey up to October 1, 1994. Records are fair, except estimated records and records below 3 cubic feet per second are poor.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	20.13	20.95	44.31	63.1	87.7	123.7	92.7	67.0	28.58	228.67	10.62	4.72
MEAN	.65	.70	1.43	2.04	3.02	3.99	3.09	2.16	.95	7.38	.34	.16
MAX	.74	.80	2.1	2.3	4.3	4.6	3.7	3.2	8.4	142	.66	.24
MIN	.35	.62	.71	1.5	2.3	3.1	2.6	1.1	.40	.32	.23	.08
AC-FT	40	42	88	125	174	245	184	133	57	454	21	9.4

Water Year 00 Total 792.18 Mean 2.16 Max 142 Min .08 Acre-Feet 1570

Beaver Creek near Beaver City
Total Annual Discharge



06847500 SAPPA CREEK NEAR STAMFORD, NE

LOCATION.--Lat 40°07'53", long 099°33'15", in NW $^{1}/_{4}$ NW $^{1}/_{4}$ sec. 23, T.2 N., R.20 W., Harlan County, Hydrologic Unit 10250011, on left bank 40 ft south of Burlington Northern Inc. track, 500 ft downstream from bridge on county highway, 2 mi east of Stamford, and 6.5 mi upstream from mouth.

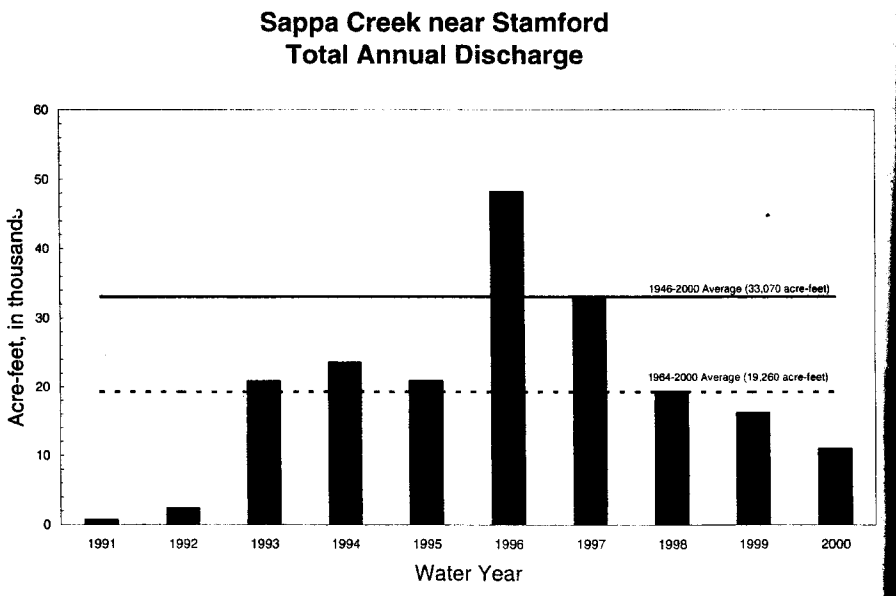
DRAINAGE AREA.--3,840 mi^2, of which about 3,370 mi^2 contributes directly to surface runoff.

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

REMARKS.--Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	213.2	351	454	460	581	921	808	480.2	382.82	876.28	16.72	0.03
MEAN	6.88	11.7	14.6	14.8	20.0	29.7	26.9	15.5	12.8	28.3	.54	.001
MAX	11	14	17	17	35	34	32	25	180	202	3.2	.03
MIN	2.4	11	13	13	14	23	20	5.4	.27	.39	.00	.00
AC-FT	423	696	901	912	1150	1830	1600	952	759	1740	33	.06

Water Year 00 Total 5544.25 Mean 15.1 Max 202 Min .00 Acre-Feet 11000



06848500 PRAIRIE DOG CREEK NEAR WOODRUFF, KS

LOCATION.--Lat 39°59'09", long 99°28'39", in NW1/4 NW1/4 sec.9, T.1 S., R.19 W., Phillips County, Hydrologic Unit 10250015, on left bank at downstream side of bridge on U.S. Highway 383, 1.0 mi south of Kansas-Nebraska State line, 2.5 mi west of Woodruff, and at mile 26.5.

DRAINAGE AREA.--1,007 mi^2.

PERIOD OF RECORD.--October 1928 to September 1932, October 1944 to current year. Monthly discharge only for some periods, published in WSP 1310.

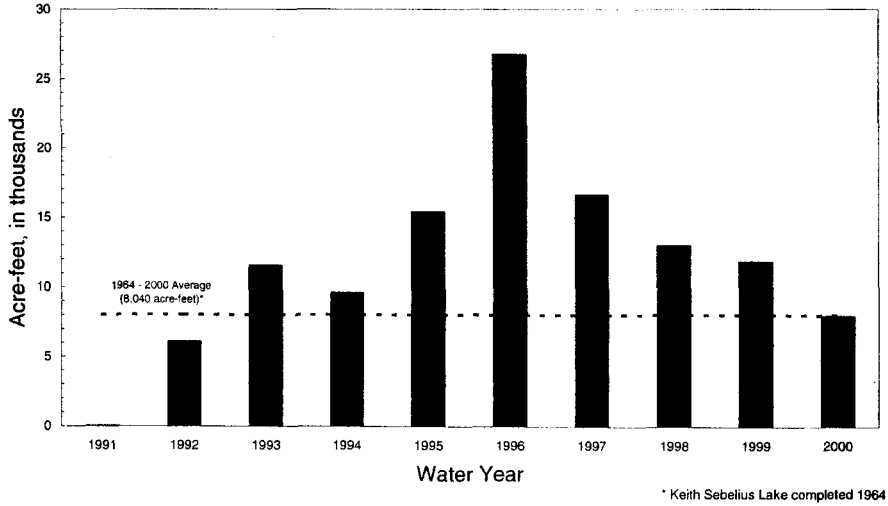
GAGE.--Water-stage recorder. Datum of gage is 2,016.20 ft above sea level. See WSP 1919 for history of changes prior to Oct. 7, 1955.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated to some extent since 1964 by Keith Sebelius Lake (station 06847950), 48.4 mi upstream, and by irrigation development upstream from station. Satellite telemeter at station.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL												
MEAN	6.21	7.36	8.91	11.4	14.1	13.2	8.71	6.70	12.7	38.9	2.5	.56
MAX	7.8	9.7	15	14	16	18	11	9.2	129	426	4.6	1.1
MIN	5.3	5.6	7.4	9.4	12	11	6.8	4.9	1.7	3.1	.71	.27
AC-FT	382	438	548	700	809	811	518	412	757	2390	154	33

Water Year 00 Total 4014 Mean 11.0 Max 426 Min .27 Acre-Feet 7960

Prairie Dog Creek near Woodruff
Total Annual Discharge



* Keith Sebelius Lake completed 1964

06852500 COURTLAND CANAL AT NEBRASKA-KANSAS STATE LINE

LOCATION.--Lat 40°00'15", long 098°07'55", in SW $^1/_4$ SE $^1/_4$ sec.32, T.1 N., R.7 W., Nuckolls County, Nebraska, Hydrologic Unit 10250016, on left bank 0.2 mi upstream from Nebraska-Kansas State line and 3.5 mi southwest of Superior, NE.

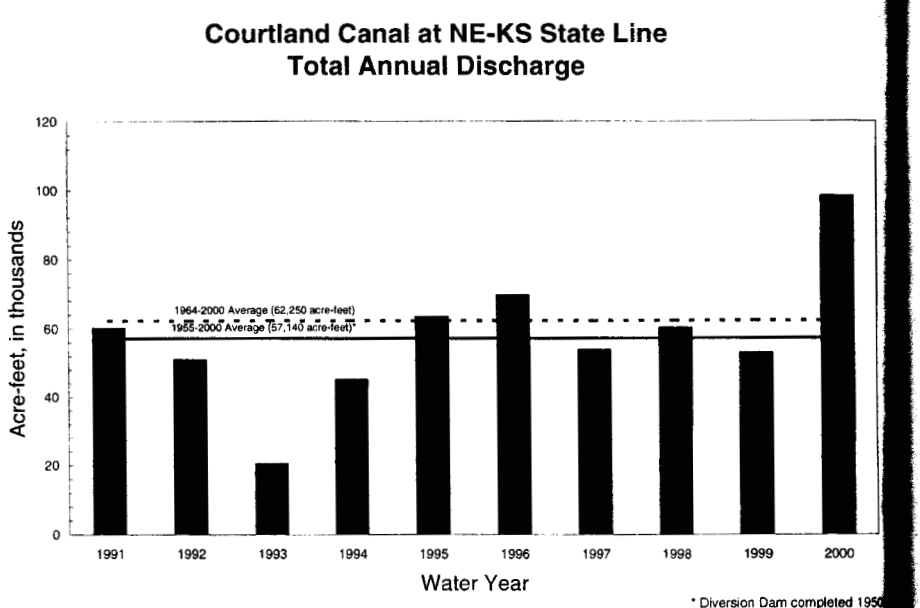
PERIOD OF RECORD.--October 1954 to current year.

GAGE.--Water-stage recorder and concrete Parshall flume. Datum of gage is 1,612.46 ft above sea level. Data collection platform at station.

REMARKS.--Records good. Canal diverts from Republican River at Courtland diversion dam in sec.7, T.1 N., R.9 W. Water is used for irrigation in Nebraska and Kansas; figures published herein represent that portion which flows into Kansas.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	84.70	0.00	0.00	0.00	603.8	5799	3258	2115	9060	14348	12082	215
MEAN	2.73	.000	.000	.000	20.8	187	109	68.2	302	463	390	72.1
MAX	39	.00	.00	.00	132	415	396	192	431	530	518	13
MIN	.00	.00	.00	.00	.00	123	.00	.00	139	378	168	4
AC-FT	168	.00	.00	.00	1200	11500	6460	4200	17970	28460	23960	428

Water Year 00 Total 49509.52 Mean 135 Max 530 Min .00 Acre-Feet 98200



06853500 REPUBLICAN RIVER NEAR HARDY, NE

LOCATION.--Lat 39°59'33", long 97°55'53", in NE1/4 NE1/4 SE1/4 sec.1, T.1 S., R.6 W., in Kansas, Republic County, Hydrologic Unit 10250016, on right bank at upstream side of county highway bridge, 1.2 mi southwest of Hardy, NE, and at mile 141.2.

DRAINAGE AREA.--22,401 mi^2, of which about 7,500 mi^2 does not contribute directly to surface runoff.

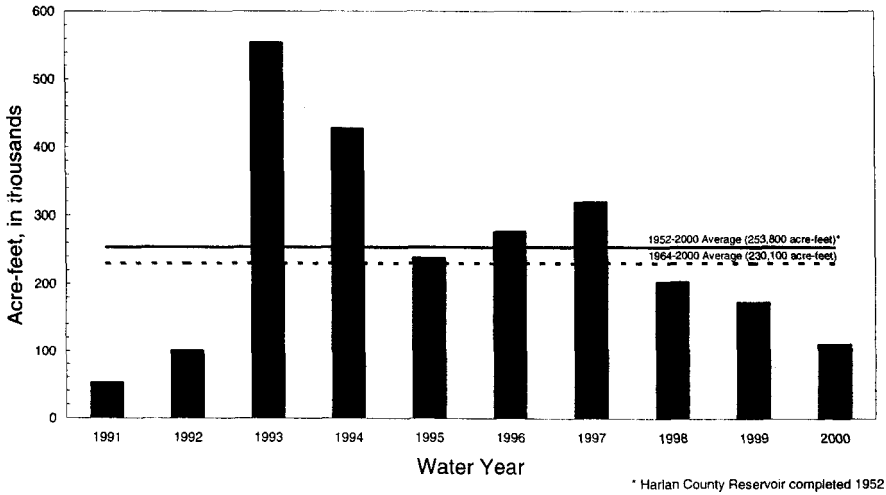
PERIOD OF RECORD.--June 1904 to September 1915 (no winter records), April 1931 to current year. Prior to May 1932, published as "at Bostwick." Records for June 1896 to November 1903 published as "near Superior" in 18th to 22nd Ann. Repts., inclusive, Pt. 4, and WSP 75, 84, and 99, have been found to be unreliable and should not be used.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by irrigation development upstream from station and by storage in reservoirs in Colorado, Kansas, and Nebraska. Considerable regulation since 1952 by Harlan County Lake (station 06849000). Satellite telemeter at station.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL												
MEAN	93.6	122	141	148	143	75.7	241	93.0	131	506	92.9	38.6
MAX	115	142	175	169	175	189	478	300	481	3890	151	129
MIN	33	105	115	120	62	53	163	37	51	97	51	22
AC-FT	5750	7260	8670	9090	8230	4660	14340	5720	7790	31090	5710	2290

Water Year 00 Total **Mean 152** **Max 3890** **Min 22** **Acre-Feet 110600**

Republican River near Hardy
Total Annual Discharge



* Harlan County Reservoir completed 1952

Appendix B

SUMMARY OF 2000 OPERATIONS

UPPER REPUBLICAN DIVISION
ARMEL UNIT
BONNY RESERVOIR

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Outflow To Hale Ditch (AF)
Jan.	1,208	369	184	0.15	32,078	0
Feb.	1,113	345	201	0.34	32,645	0
Mar.	1,902	369	291	3.45	33,887	0
Apr.	1,484	357	822	0.81	34,192	0
May	1,094	369	1,030	2.00	33,887	0
June	603	931	1,256	2.36	32,303	574
July	437	1,023	1,192	1.80	30,525	654
Aug.	259	886	1,261	1.60	28,637	517
Sep.	145	636	870	1.93	27,276	279
Oct.	602	665	553	2.39	26,660	296
Nov.	426	512	298	0.82	26,276	156
Dec.	778	369	169	0.13	26,516	0
TOTAL	10,051	6,831	8,127	17.78	–	2,476

SUMMARY OF 2000 OPERATIONS

FRENCHMAN-CAMBRIDGE DIVISION
FRENCHMAN UNIT
ENDERS RESERVOIR

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	CULBERTSON CANAL Diversions To Canal (AF)	CULBERTSON CANAL Delivered To Farms (AF)	CULBERTSON EXT.CA Diversions To Canal (AF)	Deliv To F
Jan.	1,314	61	92	0.22	20,267	0	0	0	
Feb.	1,281	58	95	0.81	21,395	0	0	0	
Mar.	1,475	61	169	1.88	22,640	0	0	0	
Apr.	1,267	60	417	1.29	23,430	1,993	194	0	
May	967	61	511	0.52	23,825	2,060	609	0	
June	416	4,564	592	0.91	19,085	1,763	976	2,479	
July	813	8,287	494	3.13	11,117	2,376	1,808	5,888	2
Aug.	774	2,229	352	0.45	9,310	1,148	912	1,635	
Sep.	1,023	60	246	2.42	10,027	0	0	0	
Oct.	1,326	61	118	4.03	11,174	0	0	0	
Nov.	1,181	60	120	1.40	12,175	0	0	0	
Dec.	1,026	61	65	0.01	13,075	0	0	0	
TOTAL	12,863	15,623	3,271	17.07	–	9,340	4,499	10,002	

NOTE: Acres irrigated 2000: Culbertson Canal - 8,359 acres; Culbertson Extension Canal - 11,022 acres.

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
MEEKER-DRIFTWOOD UNIT
SWANSON LAKE

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	MEEKER-DRIFTWOOD Release To Canal (AF)	MEEKER-DRIFTWOOD Delivered To Farms (AF)	BARTLEY CANAL Diversions To Canal (AF)	Del To
Jan.	4,473	61	298	0.08	57,506	0	0	0	
Feb.	5,228	58	308	1.11	62,368	0	0	0	
Mar.	6,843	61	535	1.85	68,615	0	0	0	
Apr.	5,403	60	1,522	1.10	72,436	0	0	0	
May	1,988	61	1,811	0.62	72,552	0	0	727	
June	1,016	12,748	2,323	0.93	58,497	6,835	3,600	2,670	
July	2,406	17,974	2,119	2.60	40,810	11,909	8,434	2,098	
Aug.	1,344	14,763	1,617	1.34	25,774	8,785	6,466	3,113	
Sep.	265	60	956	1.81	25,023	0	0	0	
Oct.	805	61	488	3.82	25,279	0	0	0	
Nov.	397	60	358	1.22	25,258	0	0	0	
Dec.	739	61	184	0.00	25,752	0	0	0	
TOTAL	30,907	46,028	12,519	16.48	–	27,529	18,500	8,608	

NOTE: Acres irrigated 2000: Meeker-Driftwood Canal - 16,527 acres; Bartley Canal - 6,423 acres.

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
RED WILLOW UNIT

HUGH BUTLER LAKE

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	RED WILLOW CANAL Diversions To Canal (AF)	RED WILLOW CANAL Delivered To Farms (AF)
Jan.	1,021	246	114	0.10	29,194	0	0
Feb.	1,339	230	116	0.98	30,187	0	0
Mar.	1,431	246	205	2.00	31,167	0	0
Apr.	1,194	238	685	1.55	31,438	0	0
May	844	246	734	0.25	31,302	0	0
June	739	3,170	1,047	1.81	27,824	2,512	1,236
July	2,156	2,997	952	4.37	26,031	2,347	1,359
Aug.	711	4,017	832	1.26	21,893	2,926	2,219
Sep.	593	238	606	1.91	21,642	0	0
Oct.	1,084	246	298	2.79	22,182	0	0
Nov.	1,280	238	197	1.19	23,027	0	0
Dec.	834	246	101	0.03	23,514	0	0
TOTAL	13,226	12,358	5,887	18.24	--	7,785	4,814

NOTE – Acres irrigated 2000: Red Willow Canal - 4,868 acres.

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
CAMBRIDGE UNIT

HARRY STRUNK LAKE

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	CAMBRIDGE CANAL Diversions To Canal (AF)	CAMBRIDGE CANAL Delivered To Farms (AF)
Jan.	2,974	1,995	136	0.21	35,030	0	0
Feb.	3,521	2,820	136	1.58	35,595	0	0
Mar.	3,977	3,062	249	1.78	36,261	0	0
Apr.	3,345	1,152	832	1.31	37,622	0	0
May	3,309	2,329	903	1.42	37,699	3,193	172
June	2,548	7,377	1,194	3.64	31,676	5,872	3,018
July	3,138	8,672	897	3.42	25,245	7,700	4,214
Aug.	3,136	11,048	706	1.15	16,627	9,527	7,379
Sep.	1,571	87	501	1.67	17,610	0	0
Oct.	2,827	105	310	4.15	20,022	0	0
Nov.	3,286	60	191	1.78	23,057	0	0
Dec.	2,374	61	98	0.06	25,272	0	0
TOTAL	36,006	38,768	6,153	22.17	--	26,292	14,783

NOTE – Acres irrigated 2000: Cambridge Canal - 17,258 acres.

TABLE 2
SUMMARY OF 2000 OPERATIONS

KANASKA DIVISION
ALMENA UNIT

KEITH SEBELIUS LAKE

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release To City Of Norton (AF)	ALMENA CANAL Diversions To Canal (AF)	ALMENA CANAL Delivered To Farms (AF)
Jan.	500	88	138	0.17	28,508	26	0	0
Feb.	767	82	155	1.12	29,038	25	0	0
Mar.	1,253	90	267	3.59	29,934	29	0	0
Apr.	867	77	848	0.84	29,876	47	480	0
May	652	93	963	0.71	29,472	62	400	0
June	730	487	1,316	4.43	28,399	68	292	0
July	1,030	1,841	1,292	3.81	26,296	60	1,458	709
Aug.	387	1,908	1,231	0.84	23,544	80	1,797	1,155
Sep.	265	88	965	1.26	22,756	58	60	0
Oct.	541	72	485	2.42	22,740	41	30	0
Nov.	396	56	259	1.03	22,821	26	0	0
Dec.	271	59	132	0.22	22,901	28	0	0
TOTAL	7,659	4,941	8,051	20.44	--	550	4,517	1,864

NOTE: Acres irrigated 2000: Almena Canal - 3,870 acres.

BOSTWICK DIVISION
FRANKLIN UNIT

	HARLAN COUNTY LAKE					FRANKLIN CANAL		NAPONEE CANAL	
	Data from Corps of Engineers				End of				
			Gross		Month	Release	Delivered	Release	Delivered
	Inflow	Outflow	Evap.	Precip.	Content	To Canal	To Farms	To Canal	To Farms
Month	(AF)	(AF)	(AF)	(Inches)	(AF)	(AF)	(AF)	(AF)	(AF)
Jan.	11,445	615	969	0.28	302,164	0	0	0	0
Feb.	17,365	575	982	1.32	317,972	0	0	0	0
Mar.	22,988	7,968	1,341	4.09	331,651	0	0	0	0
Apr.	13,517	9,944	3,984	1.01	331,240	0	0	0	0
May	9,005	3,104	4,122	1.89	333,019	0	0	0	0
June	10,403	38,554	7,303	3.54	297,565	10,187	2,060	976	378
July	24,962	54,070	6,134	4.65	262,323	13,970	4,799	1,073	549
Aug.	6,347	51,032	6,352	1.12	211,286	14,231	5,797	1,589	838
Sep.	694	366	6,837	0.99	204,777	91	33	0	0
Oct.	4,096	0	3,476	2.24	205,397	0	0	0	0
Nov.	6,962	0	2,417	1.93	209,942	0	0	0	0
Dec.	6,407	256	1,089	0.14	215,004	0	0	0	0
TOTAL	134,191	166,484	45,006	23.20	–	38,479	12,689	3,638	1,765

NOTE: Acres irrigated 2000: Franklin Canal - 11,254 acresNaponee Canal - 1,628 acres.

BOSTWICK DIVISION (Continued)
SUPERIOR-COURTLAND UNIT

	FRANKLIN PUMP CANAL		SUPERIOR CANAL			COURTLAND CANAL - ABOVE LOVEWELL			
						NEBRASKA USE		KANSAS USE	
	Diverted	Delivered	Diverted	Delivered	Total		Delivered	Diversion	Delivered
	To Canal	To Farms	To Canal	To Farms	Diversion	Total	To Farms	To Canal	To Farms
Month	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)
Jan.	0	0	0	0	0	0	0	0	0
Feb.	0	0	0	0	1,652	0	0	0	0
Mar.	0	0	0	0	12,964	0	0	0	0
Apr.	0	0	0	0	6,024	0	0	0	0
May	0	0	135	0	6,371	0	0	680	124
June	709	432	5,835	2,044	20,571	735	489	10,288	4,626
July	1,617	1,093	6,602	3,045	32,164	1,341	997	11,626	7,475
Aug.	1,620	984	5,864	2,596	27,573	1,387	1,070	9,583	6,048
Sep.	0	0	30	0	4,568	0	0	239	70
Oct.	0	0	0	0	4,481	0	0	0	0
Nov.	0	0	0	0	5,244	0	0	0	0
Dec.	0	0	0	0	5,227	0	0	0	0
TOTAL	3,946	2,509	18,466	7,685	126,839	3,463	2,556	32,416	18,343

NOTE: Acres irrigated 2000: Franklin Pump Canal - 2,106 acres; Superior Canal - 5,952 acres.
Courtland Canal-Nebraska use - 1,967 acres.
Courtland Canal-Kansas use - 12,691 acres.

BOSTWICK DIVISION (Continued)
COURTLAND UNIT

			LOVEWELL RESERVOIR					COURTLAND (Below)	
	Est. Flow	Inflow					End of		
	from	from	Total		Gross		Month	Release	Delivered
	White Rock	Courtland	Inflow	Outflow	Evap.	Precip.	Content	To Canal	To Farms
Month	Creek (AF)	34.8 (AF)	(AF)	(AF)	(AF)	(Inches)	(AF)	(AF)	(AF)
Jan.	577	0	577	6	122	0.07	18,256	0	0
Feb.	1,081	835	1,916	6	146	1.48	20,020	0	0
Mar.	811	10,025	10,836	12	310	2.11	30,534	0	0
Apr.	500	6,825	7,325	12	699	0.71	37,148	0	0
May	1,115	1,838	3,226	2,279	978	1.09	37,117	2,033	285
June	0	7,668	7,395	15,265	1,250	2.12	27,997	15,007	9,122
July	975	16,875	17,850	25,159	1,042	1.34	19,646	24,088	16,891
Aug.	2,057	14,631	16,755	21,594	850	0.62	13,957	21,327	13,212
Sep.	0	3,563	3,496	692	677	0.96	16,084	290	163
Oct.	296	3,130	3,426	12	363	1.53	19,135	0	0
Nov.	882	4,092	5,126	12	331	1.64	23,918	0	0
Dec.	0	3,997	3,845	6	170	0.72	27,587	0	0
TOTAL	8,294	73,479	81,773	65,055	6,938	14.39	–	62,745	39,673

NOTE: Acres irrigated 2000: Courtland Canal below Lovewell - 28,067 acres.

File Name: TABLE2(234).123

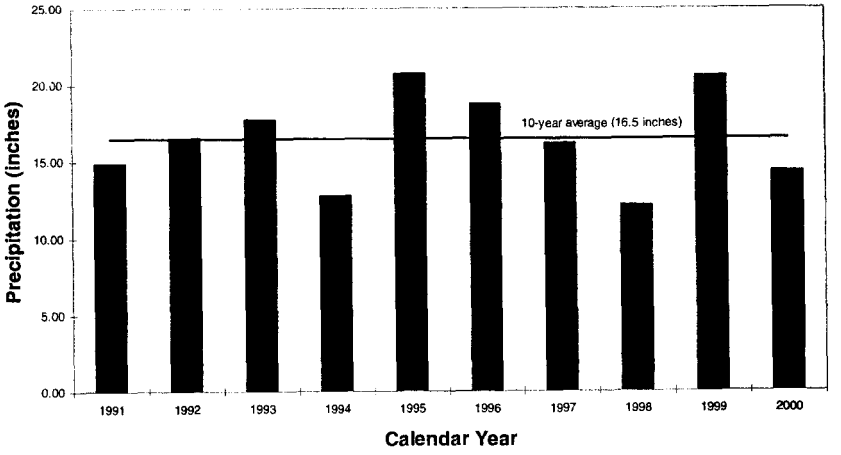
WATER DIVERTED IN 2000

(Units - Acre-Feet)

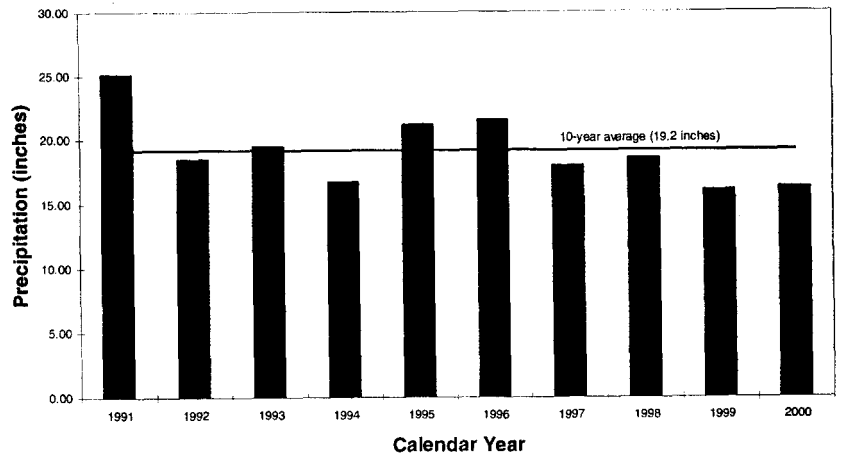
Irrigation District and Canal	2000 Irrigation Operations From	To	10-Year Average Diversion (1990-99)	2000 Diversion
Frenchman Valley Irrigation District				
Culbertson Canal	4/05	8/15	9,877	9,340
H & RW Irrigation District				
Culbertson Extension Canal	6/17	8/14	11,959	10,002
Frenchman-Cambridge Irrigation District				
Meeker-Driftwood Canal	6/05	8/25	28,686	27,529
Red Willow Canal	6/05	8/25	7,118	7,785
Bartley Canal	5/01	8/25	8,281	8,608
Cambridge Canal	5/08	8/25	24,504	26,292
Total Frenchman-Cambridge Irrigation District			68,589	70,214
Almena Irrigation District				
Almena Canal	4/03	10/16	3,442	4,517
Bostwick Irrigation District in Nebraska				
Franklin Canal	6/02	9/01	25,740	38,479
Naponee Canal	6/09	8/31	2,219	3,638
Franklin Pump Canal	6/15	8/31	2,558	3,946
Superior Canal	5/30	9/01	12,922	18,466
Courtland Canal (Nebraska)	6/08	8/31	1,686	3,463
Total Bostwick Irrigation District in Nebraska			45,125	67,992
Kansas-Bostwick Irrigation District				
Courtland Canal above Lovewell	5/08	9/30	24,018	32,416
Courtland Canal below Lovewell	5/15	9/07	40,836	62,745
Total Kansas-Bostwick Irrigation District			64,854	95,161
District 49				
Hale Ditch	11/01/99	8/15	2,222	9,707
District 65				
Pioneer Ditch	4/26	10/31	1,722	4,217
Laird Ditch	5/10	10/21	1,584	2,062
Total District 65			3,306	6,279

Appendix C

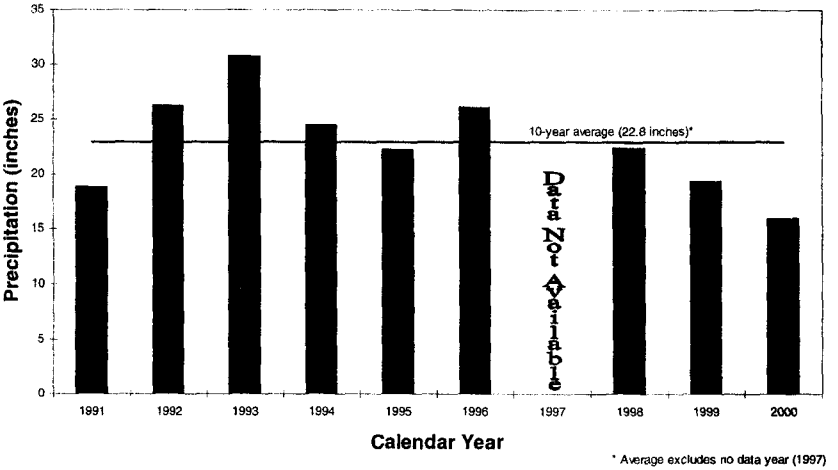
Annual Precipitation
Akron, Colorado



Annual Precipitation
Bonny Reservoir

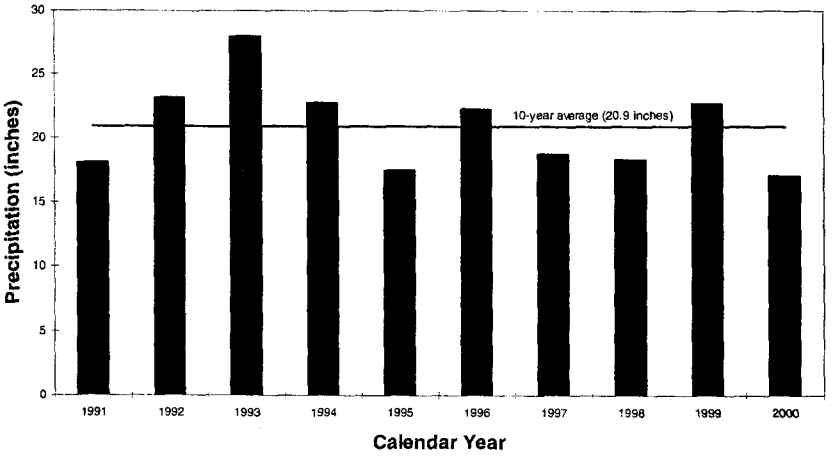


Annual Precipitation
Colby, Kansas

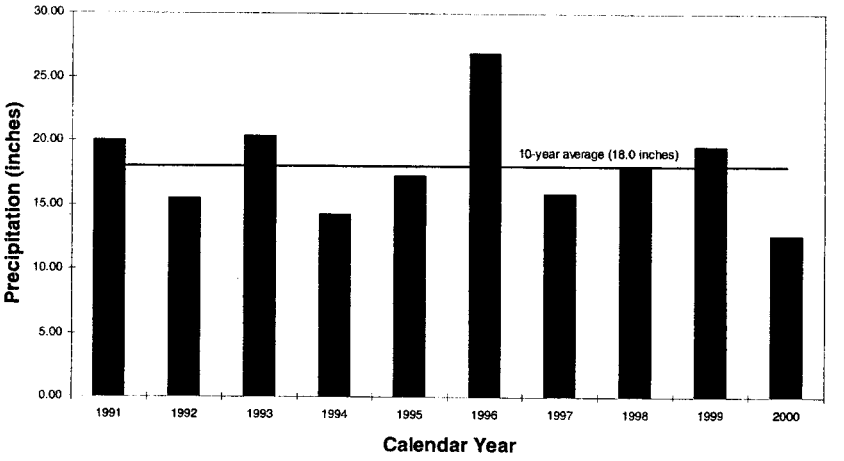


* Average excludes no data year (1997)

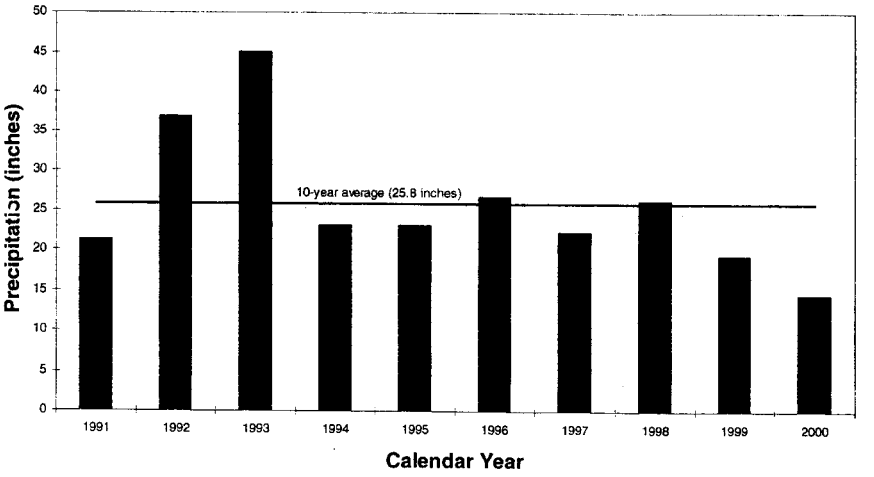
Annual Precipitation
Enders Reservoir



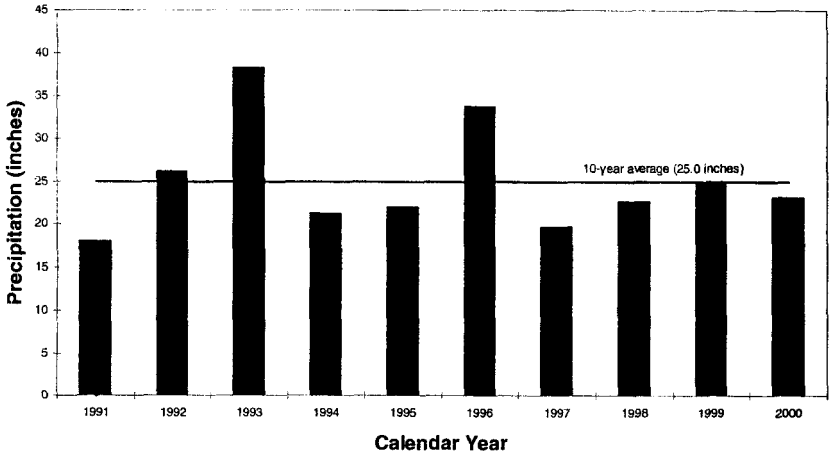
Annual Precipitation
Holyoke, Colorado



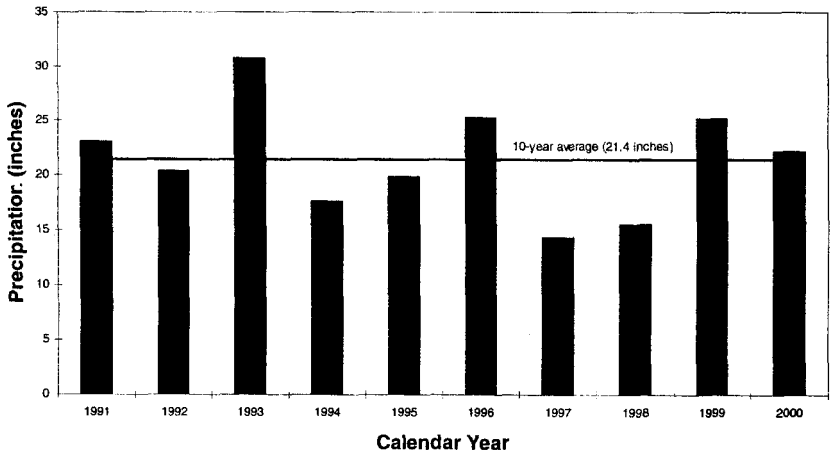
Annual Precipitation
Lovewell Reservoir



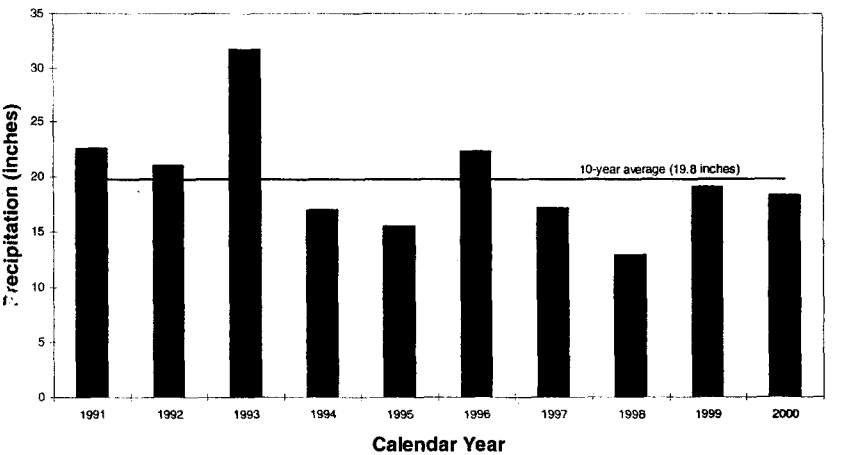
Annual Precipitation
Harlan County Lake



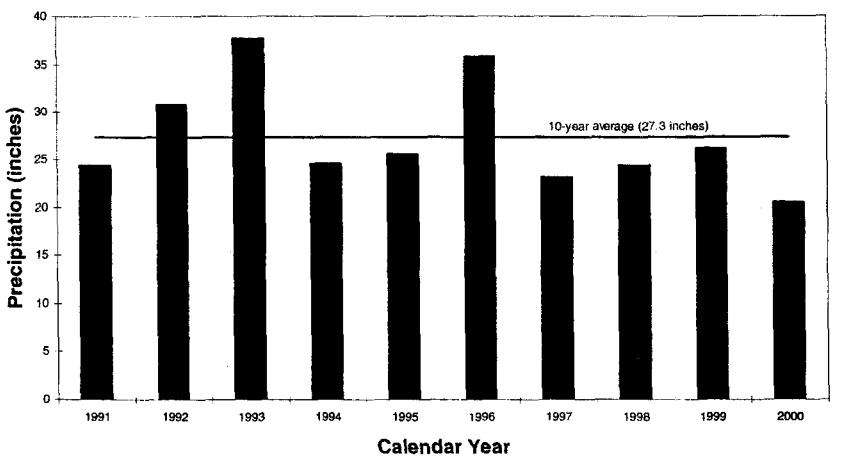
Annual Precipitation
Harry Strunk Lake



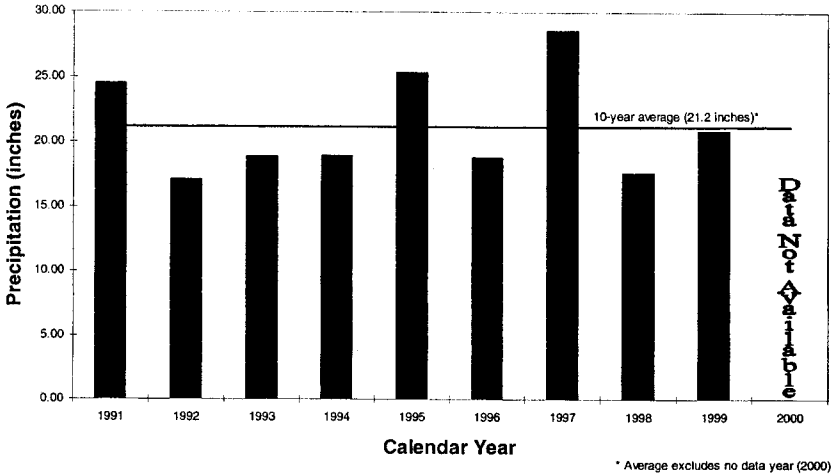
Annual Precipitation
Hugh Butler Lake



Annual Precipitation
Keith Sebelius Lake



Annual Precipitation
Stratton, Colorado



* Average excludes no data year (2000)

Annual Precipitation
Swanson Lake