YELLOWSTONE RIVER

COMPACT COMMISSION

THIRTY-NINTH ANNUAL REPORT

1990

Yellowstone River Compact Commission
821 East Interstate Avenue
Bismarck, North Dakota 58501

Honorable Mike Sullivan
Governor of the State of Wyoming
Cheyenne, Wyoming

Honorable Stan Stephens
Governor of the State of Montana
Helena, Montana

Honorable George Sinner
Governor of the State of North Dakota
Bismarck, North Dakota

Dear Sirs:

Pursuant to Article III of the Yellowstone River Compact (YRC), the Commission submits the following thirty-ninth annual report of activities for the period ending September 30, 1990.

The Commission held its annual meeting in Billings, Montana, on November 30, 1990. Mr. Gordon W. (Jeff) Fassett, Wyoming State Engineer, the designated representative for Wyoming, and Mr. W. F. Horak, the designated Federal representative and chairperson, were present. Mr. Glen McDonald represented Mr. Gary Fritz, Administrator, Water Resources Division, Montana Department of Natural Resources and Conservation, who is the designated representative for Montana.

Others present included:

Bob Arrington, Montana Department of Natural Resources and Conservation, Helena, Montana;
Craig Cooper, Water Division III, Riverton, Wyoming;
Chuck Dalby, Montana Department of Natural Resources and Conservation, Helena, Montana;
Don Englert, Water Division III, Byron, Wyoming;
Orrin Ferris, HKM Associates, Billings, Montana;
William H. Gay, Gay Ranch Inc., Broadus, Montana;
Bill Griffin, Ismay, Montana;
Jim Kircher, U.S. Geological Survey, Cheyenne, Wyoming;
Sue Lowry, Wyoming State Engineer's Office, Cheyenne, Wyoming;
Joe Moreland, U.S. Geological Survey, Helena, Montana;
Jill Morrison, Powder River Basin Resource Council, Sheridan, Wyoming;
Nicol Price, Medicine Wheel Alliance, Lame Deer, Montana; and
Michael Whitaker, Water Division III, Sheridan, Wyoming.

Mr. Horak called the meeting to order at 10:00 a.m. and introduced members and representatives. The following items of business were discussed:

1. BUDGET:

Mr. Moreland reported that the budget for water year 1990 was $37,300. Estimated expenditures for fiscal year 1991 are $39,500, a 6 percent increase over 1990. A 3 percent increase in cost is estimated for fiscal year 1992 for a total of $40,700. Mr. Fassett requested that estimates for fiscal year 1993 and fiscal year 1994 be provided at the spring meeting to allow adequate lead time for State budgeting processes.

2. STREAMFLOW AND RESERVOIR REPORT:

Mr. Moreland distributed tabular summaries and graphical displays of streamflow records and reservoir contents for the water year ending September 30, 1990. Annual streamflow was less than normal in two of the four monitored tributaries to the Yellowstone River. Flow in the Clarks Fork Yellowstone River as measured at Edgar, Montana, adjusted for diversions to Whitehorse Canal, was 96 percent of average. Flow in the Bighorn River above Tullock Creek, near Bighorn, adjusted for change in contents in Bighorn Lake, minus Little Bighorn River near Hardin, Montana, was 78 percent of average. Flow in the Tongue River at Miles City, Montana, was 81 percent of average. Flow in the Powder River near Locate, Montana, was 58 percent of average. Bighorn Lake contained 972,200 acre-feet of water at the end of water year 1990. Boysen Reservoir contained 522,700 acre-feet at the end of water year 1990.

3. ERRORS IN PREVIOUS REPORTS OF RESERVOIR CONTENTS:

Mr. Moreland reported that previous Yellowstone River Compact annual reports for water years 1982 through 1989 contained incorrect information for reservoir contents for Pilot Butte Reservoir. In calculating usable contents, dead storage was subtracted from total contents twice--once by the U.S. Bureau of Reclamation and again by the U.S. Geological Survey. To obtain the correct usable storage values, 5,360 acre-feet must be added to the reported values for those years.

4. RECORDS OF FLOW FOR CLARKS FORK YELLOWSTONE RIVER:

Mr. Moreland reported that technical reviewers of the thirty-eighth annual report had noted that the October 1986 relocation of the streamflow-gaging station on the Clarks Fork Yellowstone River from a site at Silesia, Montana, to the current site at Edgar, Montana, has resulted in streamflow information that is not equivalent to past record published in earlier Yellowstone River Compact Commission annual reports. Although discharge records are adjusted to account for diversions to the Whitehorse Canal, other factors contribute to difference in flow between the two sites. Mr. Moreland suggested that the U.S. Geological Survey undertake a series of concurrent miscellaneous measurements at the two sites to obtain information that might allow a more accurate adjustment to streamflow records from the Edgar site to calculate annual discharge of the Clarks Fork Yellowstone River at the point of measurement

specified under the current Rules and Regulations for Administration of the Yellowstone River Compact. The Commissioners agreed to the recommendation and directed the U.S. Geological Survey to acquire concurrent measurements over a range of flows during water year 1991. Mr. Moreland agreed to obtain the information at no additional cost to the Commission for water year 1991 and report the findings at the next annual meeting.

5. INTERSTATE DITCHES:

Mr. Fassett reported that the Commission had drafted amendments to the Rules and Regulations for Administration of the Yellowstone River Compact to remove deadlines for Commission consideration of water rights for interstate ditches. Ms. Lowry reported that public notification of the proposed rule changes had been published in local newspapers. The Commission discussed the need for publication of the proposed rule changes in the Federal Register. Mr. Fassett reminded the Commission that the Field Solicitor for the Department of the Interior had agreed that local publication was appropriate and that publication in the Federal Register was not necessary. Mr. Fassett moved for adoption of the proposed rule change to remove deadlines for water rights consideration for interstate ditches. The Commission voted unanimously to adopt the proposed rule changes.

6. INTERSTATE WATER MARKETING:

Mr. Fassett reported that the Wyoming State Engineer's Office has received inquiries from Wyoming water users interested in marketing excess water to Montana irrigators. The inquiries have been informal, but Mr. Fassett felt that the Commissioners should be aware of the situation. Mr. Dalby indicated that Montana was familiar with the issue. Mr. Gay reported that a demonstration exercise was undertaken during the past year to test the feasibility of releasing water from DeSmet Reservoir for delivery to downstream users. A release of 2,500 acre-feet was made from the reservoir and streamflow was monitored to determine the effects on discharge and water quality. Although an increase in discharge was noted, the demonstration was not conclusive. Mr. Fassett stated that Wyoming State law requires legislative approval to market water across State lines. Any plans to proceed beyond the demonstration phase would require considerable lead time.

7. WYOMING WATER DEVELOPMENT COMMISSION ACTIVITIES:

Mr. Fassett reported on the activities of the Wyoming Water Development Commission. He explained that the source of funds for water-development projects is severance and excise taxes. A 3-level process driven by local interest is followed. Planning and feasibility studies are funded entirely by the Water Development Commission. Projects approved for construction are funded by a 75/25 cost share agreement between the State and local interests. Mr. Fassett provided a list of current water-development projects and stated that the Buffalo Bill Dam project is currently the State's highest priority. Other priority projects include Deer

Creek Dam on the North Platte and Sandstone Reservoir in the Colorado River drainage. Mr. Dalby asked about the current status of the Middle Fork Powder River project. Mr. Fassett reported that the project is a State-sponsored project that has dropped to fifth or sixth on the State's priority list. Most of the water-development funded projects are rehabilitation projects related to dam safety and municipal water supplies.

8. MISCELLANEOUS:

Coal-Bed Methane Activities:

Mr. Fassett provided an update on current activities related to coal-bed methane projects in Wyoming. The U.S. Bureau of Land Management has issued permits in the Big George area of the Powder River basin. The project involves withdrawal of water from coal beds 800 to 1,000 feet below land surface to allow production of methane gas. Permits are required from the Wyoming Oil and Gas Commission for methane extraction. Withdrawal of water requires water-right permits from the Wyoming State Engineer's Office. The Engineer's Office is concerned about the potential effects of coal-bed dewatering and disposal of withdrawn water. A temporary tax incentive to encourage development was initially scheduled to expire in 1990, but Congress has extended the deadline 2 years. Mr. Fassett reported that the Environmental Assessment completed by the U.S. Bureau of Land Management is considered to be inadequate for evaluation of potential environmental impacts. The Engineer's Office has issued 25 to 30 permits in the Powder River Basin, but actual production has been limited by economic factors related to the large volumes of ground water that must be pumped. The U.S. Bureau of Land Management is considering preparation of a programmatic Environmental Impact Statement. Mr. Dalby commented that Montana was surprised that the U.S. Bureau of Land Management had issued an Environmental Assessment without considering Montana's concerns. Montana has appealed the Environmental Assessment decision and has proposed that a threshold of 200 extraction wells be used as a trigger for implementation of a monitoring program. The U.S. Bureau of Land Management has requested an extension of the appeal process to prepare a response to Montana's concerns.

Clarks Fork Yellowstone River Wild and Scenic River Designation:

Mr. Fassett reported that Congress has passed a bill that designates 20.5 miles of the mainstem of the Clarks Fork Yellowstone River as a Wild and Scenic River. The bill established a 3-year study period to quantify reserved water rights. Language in the bill requires that reserved water rights must be adjudicated under the Wyoming reserved water rights process. The U.S. Department of Agriculture must apply to Wyoming to reserve water for the designated reach. Mr. Fassett reported that a 200-cubic feet per second instream flow reservation has been issued for a 6-mile reach of the river. He expects the U.S. Department of Agriculture to request a significant increase in the reserved water right--as much as 80 percent of the historic flow. Mr. Dalby indicated that Montana is

supportive of the actions and encourages large reservations for the designated Wild and Scenic River reach.

Buffalo Bill Dam Rehabilitation:

Mr. Fassett reported that the Buffalo Bill Dam rehabilitation project is nearing completion. The project will result in a 160,000 acre-feet enlargement of the reservoir that will provide 75,000 acre-feet of firm yield. Total cost of the project is $125 million, with Wyoming contributing $52 million. The Congressional bill to provide the final increment of funds to complete the project was killed in the last legislative session. An additional $12 million in Federal funds is needed to finish the project. The delay will add about $5 million to the cost of the project.

Wind River Indian Reservation Litigation:

Mr. Fassett stated that the U.S. Supreme Court upheld the Wyoming State Supreme Court decision on Wind River Indian Reservation water rights in June 1989. The decision awarded the Indian tribes 500,000 acre-feet of water for irrigation use with a priority date of 1868. The Wyoming State Engineer and the tribes are currently negotiating on the administration and use of the reserved water rights. New litigation has been filed to use part of the reserved water rights for protection of instream flows. The tribes would like to dedicate 100,000 acre-feet of their water right for instream flow purposes. The State has a process which would allow for change in use but the process is based on a standard of "no injury." Conversion of the reserved water right to instream flow protection would injure holders of junior water rights. The tribes filed suit in July 1990 to convert water rights reserved for agricultural uses to instream flows. Mr. Fassett anticipates that the suit will go to the Wyoming State Supreme Court for decision.

Little Big Horn Pumped Hydro Facility:

Mr. Fassett explained that a pumped hydro project has been proposed on Dry Creek. The project would involve a 10,000 acre-feet reservoir with a lift of 2,000 feet. The facility would have a potential generating capacity of 1,000 megawatts. A slight increase in evaporation from the reservoir is the only significant impact anticipated. Ms. Lowry stated that a proposed Wild and Scenic River designation may affect the project. Mr. Fassett commented that a conglomerate from France has been funding the planning process. Utility companies who would purchase power from the project believe that a future market may develop for peaking power.

Crow and Northern Cheyenne Indian Reservation Reserved Water Rights:

Mr. McDonald reported that the Montana Reserved Water Rights Compact Commission has been meeting monthly with the Northern Cheyenne tribes. Negotiations have focused on Rosebud Creek and the Tongue River. The tribes have reduced their claims on the Tongue River from 80,000 to 40,000 acre-feet. The priority date of the

claims is under discussion and negotiations are continuing on the uses the tribes may make of the water. Questions remain on availability of water in Rosebud Creek. Several downstream users will be affected by any negotiated settlement. Mr. Fassett asked if Montana would allow the tribes to market water off the reservation. Mr. McDonald responded affirmatively. Ms. Lowry asked if the planned rehabilitation of the Tongue River Dam would provide adequate storage to satisfy the tribes needs. Mr. McDonald responded that final agreements will depend on priority dates and quantities of storage. Mr. Fassett requested that Montana continue to provide information on the negotiations as they relate to Wyoming water rights. Mr. Fassett asked if Montana has been negotiating with the tribes of the Crow Indian Reservation. Mr. McDonald replied that no activity is occurring at the present time. Mr. Cooper stated that Wyoming has heard comments that the Crow tribe has plans to claim reserved water rights that may affect Wyoming water users and asked Montana to keep them informed of any negotiations.

Tongue River Dam Rehabilitation:

Mr. McDonald reported that the Tongue River Dam rehabilitation project is Montana's highest priority water project. Montana is concerned about safety and views the rehabilitation project as an important component of the current negotiations with the Northern Cheyenne tribes. A $600,000 feasibility study is underway with participation by U.S. Bureau of Reclamation, Northern Cheyenne tribes, and the State of Montana. Current plans would raise the reservoir level 4 feet to enlarge storage capacity and increase spillway design to handle 100,000 cubic feet per second.

Adjudication of Montana Water Rights:

Mr. Arrington reported that Montana is in some phase of adjudication in 45 of 80 basins. The State is processing about 214,000 water rights claims that were filed between 1979 and 1982. Montana has delayed adjudication of basins which contain Indian reservations to allow the Federal Reserved Water Rights Compact Commission time to negotiate agreements with the tribes. Basins that contain Federal reserved water rights claims are issued temporary preliminary decrees pending settlement of Federal reserved water rights claims. Mr. Fassett requested a copy of a map showing the status of Montana's adjudication process.

Miscellaneous Items:

Mr. McDonald reported that Commissioner Fritz has drafted a letter to Mr. Horak requesting a formal statement from the U.S. Geological Survey regarding the role of the Federal representative on the Yellowstone River Compact Commission in casting tie-breaking votes on matters before the Commission. Mr. Fassett requested a copy of the letter and suggested that a full discussion of the issue be aired before the letter is forwarded to U.S. Geological Survey headquarters.

Mr. Fassett requested that Montana supply a list of all applications for instream flow reservations in the Yellowstone River Basin.

Mr. McDonald commented that Montana is proceeding with negotiations with the Northern Cheyenne tribes and hopes to have an agreement prepared for ratification for the current legislative session.

Mr. Horak asked if the Commission desired a spring meeting. Mr. Fassett stated that a spring meeting would be desirable. He suggested that an agenda of specific topics be prepared that would include some attainable goals. Mr. Fassett recommended that the Commission consider authorization of technical committees to address topics between Commission meetings. Mr. Horak suggested that the Commission engage in a conference call to identify some topics for committees to consider.

Having no other business, the meeting was adjourned at 2:00 p.m.

Respectfully submitted,

Gordon W. Fassett
Commissioner for Wyoming

Gary Fritz
Commissioner for Montana

William F. Horak, Jr.
Federal Representative

CONTENTS

ILLUSTRATIONS

GENERAL REPORT

Cost of operation and budget

The work funded by the Commission, which to date has been primarily concerned with the collection of required hydrologic data, has been financed through cooperative arrangements whereby Montana and Wyoming each bear one-fourth of the cost and the remaining one-half is borne by the United States. The salaries and necessary expenses of the State and U.S. Geological Survey representatives, and the cost to other agencies of collecting hydrologic data, are not considered as expenses of the Commission.

The expense of the Commission during fiscal year 1990 was $37,300, in accordance with the budget adopted for the year.

The budgets for fiscal years 1991 and 1992 were tentatively adopted subject to the availability of appropriations.

The budgets for the three fiscal years are summarized as follows:

October 1, 1989, to September 30, 1990 (fiscal year 1990):

Continuation of existing stream-gaging programs	$37,300

October 1, 1990, to September 30, 1991 (fiscal year 1991):

Continuation of existing stream-gaging programs	$39,500

October 1, 1991, to September 30, 1992 (fiscal year 1992):

Estimate of continuation of existing stream-gaging programs	$40,700

Stream-gaging-station operation

Gaging stations at the measuring sites specified in the Compact were continued in operation and satisfactory discharge records were collected at each station. Locations of gaging and reservoir stations are shown on a map of the Yellowstone River Basin at the end of the report.

During water year 1990, annual streamflow was less than normal[1] in two of the four tributaries of the Yellowstone River as given in the following table:

Station number	Measurement site	Percent of average
06208500	Clarks Fork Yellowstone River at Edgar, Mont., minus diversions to Whitehorse Canal	96
06294500	Bighorn River above Tullock Creek, near Bighorn, adjusted for change in contents in Bighorn Lake, minus Little Bighorn River near Hardin, Mont.	78
06308500	Tongue River at Miles City, Mont.	81
06326500	Powder River near Locate, Mont.	58

Tabulation of streamflow data for water year 1990 and graphical comparisons with average flows for the preceding year and for selected base periods are given in the section "Monthly summary of discharge for Compact stream-gaging stations."

Diversions

No diversions were regulated by the Commission during the year. The Commissioners considered the need to develop procedures to administer water in accordance with the provisions of the Compact.

Storage in reservoirs

Reservoirs completed after January 1, 1950

Bighorn Lake, a U.S. Bureau of Reclamation project on the Bighorn River, and the largest storage project in the basin, contained 867,300 acre-feet at the beginning of the year and 972,200 acre-feet at the close. It fluctuated from 693,100 acre-feet on April 13, 1990, to 1,001,000 acre-feet on August 6, 1990. Boysen Reservoir, located on the Wind River and operated by the U.S. Bureau of Reclamation, began the year with 604,100 acre-feet in storage and ended with 532,700 acre-feet. Monthend and yearend contents and a description of these reservoirs are given in the section "Monthly summary of contents for Compact reservoirs completed after January 1, 1950." The Commission is cognizant of other reservoirs in the Yellowstone River basin and considers their aggregate effect to be insufficient to warrant the collection of storage data at this time.

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[1] The "normal" range is 80 to 120 percent of average.

Reservoirs existing on January 1, 1950

As a matter of record and general information, monthend storage data are given later in the report for reservoirs in existence upstream from the points of measurement on January 1, 1950. These data are pertinent to allocation under Article V, Section C, Item 3 of the Compact.

MONTHLY SUMMARY OF DISCHARGE FOR COMPACT STREAM-GAGING STATIONS

06208500 Clarks Fork Yellowstone River at Edgar, Mont.

LOCATION.--Lat 45°27'58", long 108°50'35", in SE1/4 SE1/4 SE1/4 sec. 23, T. 4 S., R. 23 E., Carbon County, Hydrologic Unit 10070006, on right bank 400 ft downstream from county bridge, 0.5 mi east of Edgar, 6 mi upstream from Rock Creek, and at river mile 27.0.

DRAINAGE AREA.--2,032 mi^2.

PERIOD OF RECORD.--July 1921 to September 1969, October 1986 to current year. Records for October 1969 to September 1986 (published as Clarks Fork Yellowstone River near Silesia) at site 5.8 mi downstream not equivalent owing to diversion in Whitehorse Canal during irrigation season. Records since January 1950 available in annual reports of Yellowstone River Compact Commission.

GAGE.--Water-stage recorder. Elevation of gage is 3,460 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 31, 1953, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 10 to Feb. 26, Mar. 23-26. Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 41,500 acres, of which about 840 acres are downstream from the station. In addition, about 6,300 acres of land upstream from the station are irrigated by diversions from the adjoining Rock Creek basin. Figures of discharge given herein have the flow of Whitehorse Canal subtracted.

AVERAGE DISCHARGE.--52 years (water years 1922-69, 1987-90), 1,030 ft^3/s, 746,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 10,900 ft^3/s, June 2, 1936, gage height, 8.62 ft; minimum, 36 ft^3/s, Apr. 22, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,040 ft^3/s, June 25, gage height, 7.08 ft; minimum daily, 150 ft^3/s, Dec. 21.

Month	Second-foot days	Mean daily discharge (ft^3/s)	Maximum daily discharge (ft^3/s)	Minimum daily discharge (ft^3/s)	Discharge, in acre-feet
October 1989	17,038	550	630	321	33,790
November	16,294	543	609	438	32,320
December	12,793	413	600	150	25,370
January 1990	13,380	432	600	200	26,540
February	12,662	452	700	170	25,120
March	10,987	354	406	220	21,790
April	30,043	1,001	1,860	362	59,590
May	42,285	1,364	3,860	801	83,870
June	113,140	3,771	5,640	2,300	224,400
July	62,638	2,021	4,270	817	124,200
August	18,787	606	975	347	37,260
September 1990	9,702	323	385	284	19,240
1990 water year	359,749	986	5,640	150	713,600

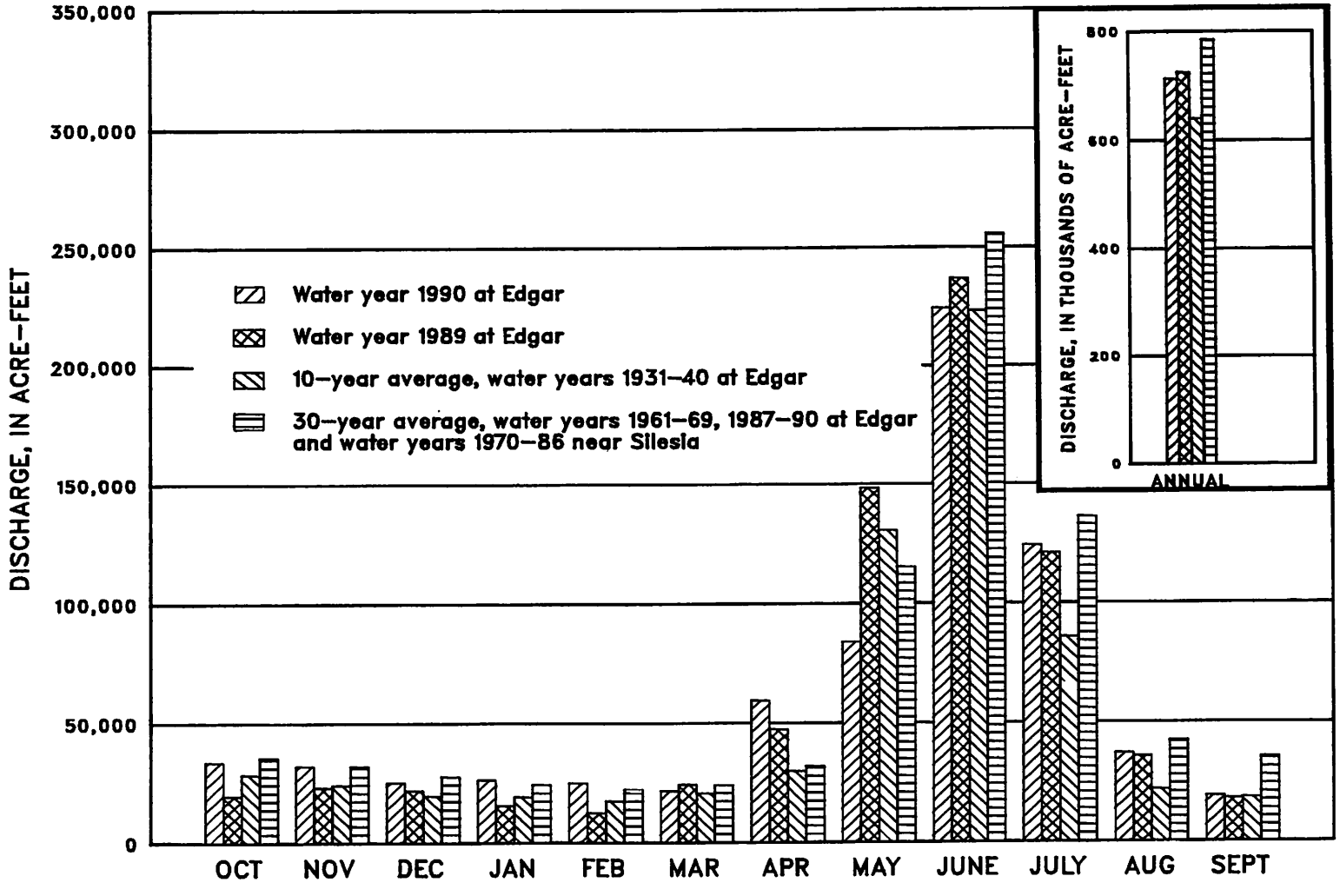


Figure 1.--Comparison of discharge of the Clarks Fork Yellowstone River during water year 1990 with discharge during water year 1989 and with 10-year and 30-year average discharges.

06294000 Little Bighorn River near Hardin, Mont.

LOCATION.--Lat 45°44'09", long 107°33'24", in SE1/4 NE1/4 NE1/4 sec. 19, T. 1 S., R. 34 E., Big Horn County, Hydrologic Unit 10080016, on left bank 50 ft downstream from bridge on Sarpy Road, 0.2 mi upstream from terminal wasteway of Agency Canal, 0.6 mi upstream from mouth, and 2.3 mi east of Hardin.

DRAINAGE AREA.--1,294 mi^2.

PERIOD OF RECORD.--June 1953 to current year. Records since June 1953 available in annual reports of Yellowstone River Compact Commission.

REVISED RECORDS.--WDR MT-86-1: 1978.

GAGE.--Water-stage recorder. Datum of gage is 2,882.29 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 7, 1953, nonrecording gage at site 0.4 mi downstream. Oct. 7, 1953, to May 6, 1963, water-stage recorder at site 0.3 mi downstream. May 6, 1963, to Nov. 6, 1963, nonrecording gage at site 0.4 mi downstream. All at different datums. Nov. 7, 1963, to Aug. 15, 1976, water-stage recorder at site 35 ft downstream at present datum. Aug. 15, 1976, to Sept. 30, 1979, water-stage recorders located on each bank downstream of Sarpy Road bridge and were used depending on control conditions.

REMARKS.--Estimated daily discharges: Dec. 10 to Mar. 1, Mar. 22-27, Apr. 11-19, Sept. 28-30. Records good except those for estimated daily discharges, which are poor. Flow partly regulated by Willow Creek Reservoir (capacity 23,000 acre-ft). Diversions for irrigation of 20,980 acres upstream from station. Figures of discharge given herein include flow of terminal wasteway of Agency Canal.

AVERAGE DISCHARGE.--37 years, 297 ft^3/s, 215,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,600 ft^3/s, May 19, 1978, gage height, 11.20 ft, used gage height as obtained at bridge on Sarpy Road; maximum gage height, 11.78 ft, Mar. 20, 1960, site and datum then in use, backwater from ice; minimum discharge observed, 0.20 ft^3/s, Aug. 7, 1961, result of discharge measurement.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 1,000 ft^3/s and maximums(*):

Date	Time	Discharge, in ft^3/s	Gage height, in feet
June 2	1500	1,040	4.06
June 13	1000	*1,090	*4.10

Minimum daily discharge, 25 ft^3/s, Dec. 22.

Month	Second-foot days	Mean daily discharge (ft^3/s)	Maximum daily discharge (ft^3/s)	Minimum daily discharge (ft^3/s)	Discharge, in acre-feet
October 1989	3,689	119	149	45	7,320
November	4,407	147	202	107	8,740
December	3,385	109	170	25	6,710
January 1990	4,315	139	220	70	8,560
February	5,640	201	700	35	11,190
March	5,710	184	280	111	11,330
April	6,300	210	389	143	12,500
May	13,210	426	744	280	26,200
June	22,475	749	1,060	445	44,580
July	5,927	191	418	90	11,760
August	2,513	81.1	110	58	4,980
September 1990	1,577	52.6	83	31	3,130
1990 water year	79,148	217	1,060	25	157,000

06294500 Bighorn River above Tullock Creek, near Bighorn, Mont.

LOCATION.--Lat 46°07'29", long 107°28'06", in SE1/4 SE1/4 NE1/4 sec. 3, T. 4 N., R. 34 E., Treasure County, Hydrologic Unit 10080015, on right bank, 1.9 mi upstream from Tullock Creek, 3.0 mi upstream from mouth, 3.6 mi southwest of Bighorn, and 4.5 mi southeast of Custer.

DRAINAGE AREA.--22,414 mi^2. Area at site used Oct. 7, 1955, to Sept. 30, 1981, 22,885 mi^2.

PERIOD OF RECORD.--Oct. 1, 1981, to current year. Records since January 1950 available in annual reports of the Yellowstone River Compact Commission. Previously, published as "06294700 Bighorn River at Bighorn, MT," 1956-81, and as "near Custer," 1945-55. Flows are equivalent at all sites.

GAGE.--Water-stage recorder. Elevation of gage is 2,700 ft above National Geodetic Vertical Datum of 1929, from topographic map. May 11, 1945, to Dec. 6, 1945, nonrecording gage, and Dec. 7, 1945, to Oct. 6, 1955, water-stage recorder at different datum. Oct. 7, 1955, to Sept. 30, 1981, at site 2.3 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Dec. 18-26, Jan. 30 to Feb. 3, Feb. 11-19, Mar. 25. Records good except those for estimated daily discharges, which are poor. Flow regulated by Bighorn Lake beginning November 1965 (usable capacity, 1,356,000 acre-ft). Major regulation prior to November 1965 by 14 reservoirs in Wyoming and 1 in Montana with combined usable capacity of about 1,400,000 acre-ft; see section "Monthly summary of contents for Compact reservoirs existing on January 1, 1950." Diversions for irrigation of about 445,200 acres upstream from station.

AVERAGE DISCHARGE.--45 years (water years 1946-81, 1982-90), 3,821 ft^3/s, 2,768,000 acre-ft/yr, unadjusted.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 59,200 ft^3/s, May 20, 1978, gage height, 14.15 ft; maximum gage height recorded, 14.21 ft, Apr. 2, 1965, ice jam; minimum discharge, about 275 ft^3/s, Nov. 15, 1959, result of freezeup; minimum daily, 400 ft^3/s, Apr. 4, 1967.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft^3/s, July 4, 1983, gage height, 5.66 ft; maximum gage height, 8.65 ft, Jan. 13, 1985, ice jam; minimum daily discharge, 1,020 ft^3/s, Oct. 19, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge not determined but occurred on Dec. 26; maximum gage height, 7.88 ft, Dec. 24, backwater from ice; minimum daily discharge, 1,020 ft^3/s, Oct. 19.

Month	Second-foot days	Mean daily discharge (ft^3/s)	Maximum daily discharge (ft^3/s)	Minimum daily discharge (ft^3/s)	Discharge, in acre-feet	Adjusted discharge, in acre-feet*
October 1989	43,130	1,391	1,640	1,020	85,550	159,900
November	76,720	2,557	3,340	1,330	152,200	137,600
December	108,750	3,508	4,600	2,700	215,700	130,000
January 1990	112,870	3,641	4,200	3,000	223,900	144,500
February	95,940	3,426	3,700	3,000	190,300	117,500
March	101,010	3,258	3,500	2,720	200,400	162,900
April	83,940	2,798	3,200	2,620	166,500	156,300
May	83,880	2,706	3,090	2,470	166,400	200,400
June	87,790	2,926	3,160	2,550	174,100	298,600
July	83,980	2,709	2,890	2,570	166,600	217,800
August	83,050	2,679	2,880	2,480	164,700	136,100
September 1990	70,040	2,335	2,720	2,130	138,900	131,600
1990 water year	1,031,100	2,825	4,600	1,020	2,045,000	1,992,900

*Adjusted for change in contents in Bighorn Lake minus Little Bighorn River near Hardin.

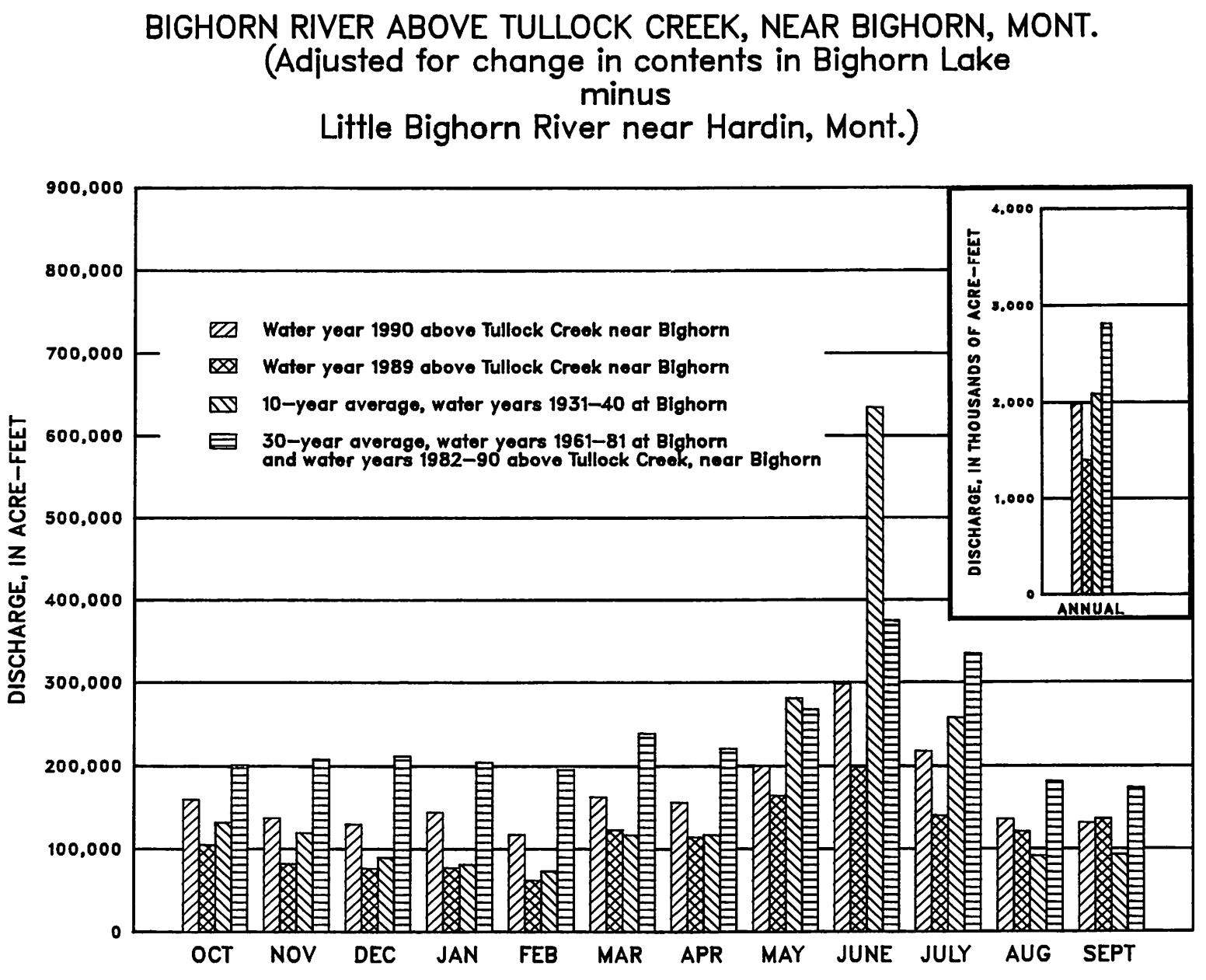


Figure 2.--Comparison of discharge of the Bighorn River during water year 1990 with discharge during water year 1989 and with 10-year and 30-year average discharges.

06308500 Tongue River at Miles City, Mont.

LOCATION.--Lat 46°20'44", long 105°48'10", in NE1/4 NE1/4 SE1/4 sec. 23, T. 7 N., R. 47 E., Custer County, Hydrologic Unit 10090102, on right bank 4 mi south of Miles City and at river mile 8.1.

DRAINAGE AREA.--5,379 mi^2.

PERIOD OF RECORD.--April 1938 to April 1942, April 1946 to current year. Published as "near Miles City" April 1938 to April 1942. Not equivalent to records published as "near Miles City" May 1929 to October 1932. Monthly discharges only for some periods, published in WSP 1309. Records since January 1950 available in annual reports of Yellowstone River Compact Commission.

GAGE.--Water-stage recorder. Datum of gage is 2,375.76 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). April 1938 to April 1942, nonrecording gage at site 8 mi upstream at different datum. April 1946 to Sept. 30, 1963, at datum 1.00 ft higher.

REMARKS.--Estimated daily discharges: Nov. 15-19, Nov. 23 to Mar. 8, Mar. 26-28, July 7-10. Records good except those for estimated daily discharges, which are poor. Flow regulation by Tongue River Reservoir (see section "Monthly summary of contents for Compact reservoirs existing on January 1, 1950") and many small reservoirs in Wyoming (combined capacity, about 15,000 acre-ft). Diversions for irrigation of about 100,800 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--47 years (1938-41, 1946-90), 420 ft^3/s, 304,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft^3/s, June 15, 1962, gage height, 12.33 ft, present datum, from rating curve extended above 8,220 ft^3/s on basis of float measurement; maximum gage height, 13.27 ft, Mar. 19, 1960, Feb. 15, 1971, ice jam, present datum; no flow July 9-19, Aug. 13, 14, Sept. 28, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,770 ft^3/s, June 21, gage height, 4.49 ft; maximum gage height, 4.53 ft, Feb. 24, backwater from ice; minimum daily discharge, 30 ft^3/s, Dec. 22.

Month	Second-foot days	Mean daily discharge (ft^3/s)	Maximum daily discharge (ft^3/s)	Minimum daily discharge (ft^3/s)	Discharge, in acre-feet
October 1989	2,923	94.3	128	69	5,800
November	2,812	93.7	135	57	5,580
December	2,108	68.0	90	30	4,180
January 1990	4,135	133	220	60	8,200
February	5,390	192	700	65	10,690
March	12,086	390	580	198	23,970
April	14,533	484	882	354	28,830
May	18,110	584	658	446	35,920
June	31,860	1,062	1,720	595	63,190
July	20,697	668	1,250	187	41,050
August	5,100	165	199	123	10,120
September 1990	4,549	152	198	115	9,020
1990 water year	124,303	341	1,720	30	246,600

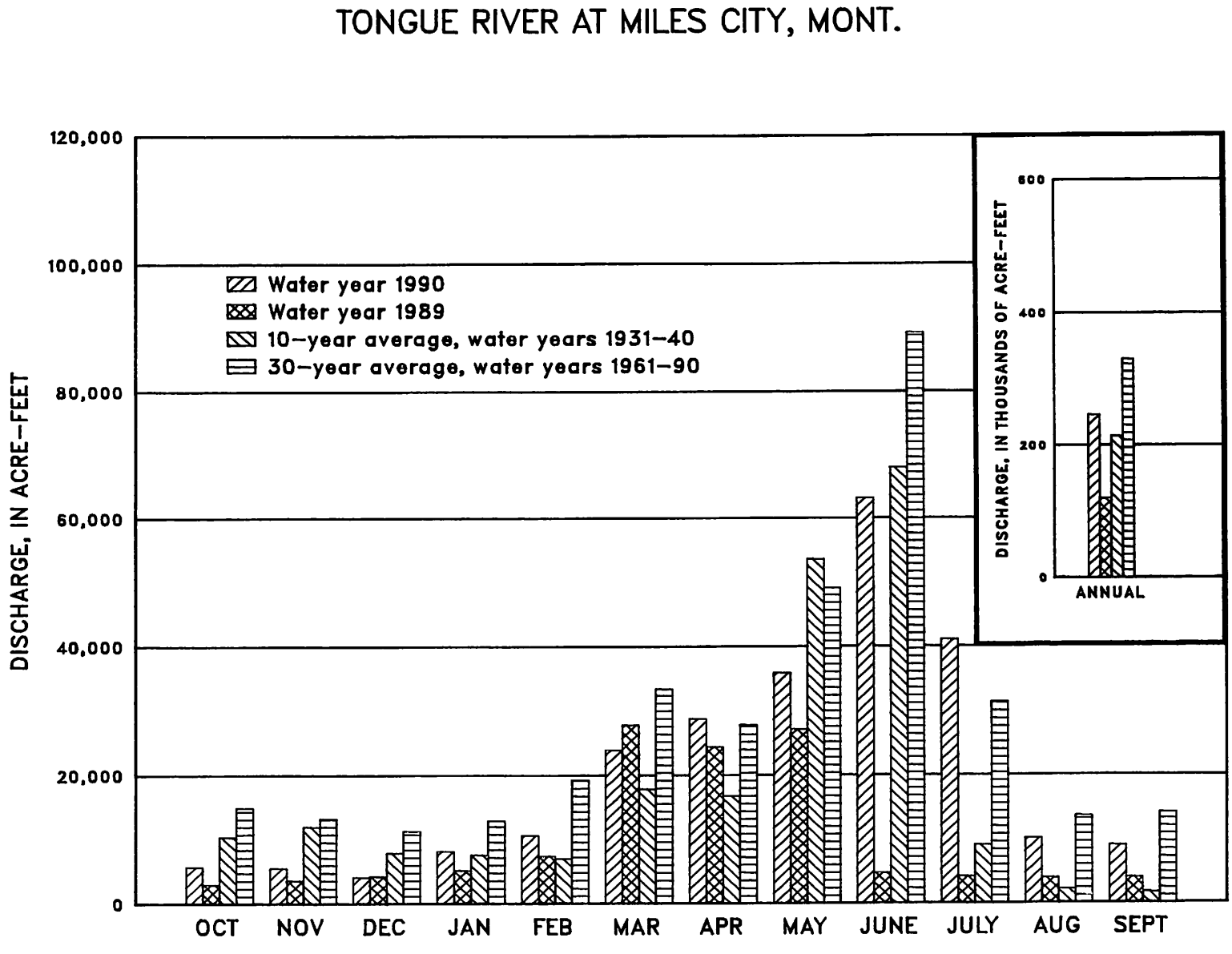


Figure 3.--Comparison of discharge of the Tongue River during water year 1990 with discharge during water year 1989 and with 10-year and 30-year average discharges.

06326500 Powder River near Locate, Mont.

LOCATION.--Lat 46°26'56", long 105°18'44", in NW1/4 SW1/4 sec. 14, T. 8 N., R. 51 E., Custer County, Hydrologic Unit 10090209, on left bank 1.5 mi downstream from bridge on old U.S. Highway 12 at present site of Locate, 1.5 mi upstream from Locate Creek, 5 mi west of former site of Locate, 25 mi east of Miles City, and at river mile 27.9.

DRAINAGE AREA.--13,194 mi^2. Drainage area at site 1.5 mi upstream, 13,189 mi^2.

PERIOD OF RECORD.--March 1938 to current year. Records since January 1950 available in annual reports of Yellowstone River Compact Commission.

REVISED RECORDS.--WSP 926: 1939. WSP 1309: 1938-39 (M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,384.79 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 11, 1947, nonrecording gage at bridge 1.5 mi upstream, and July 11, 1947, to Sept. 30, 1965, water-stage recorder at site near upstream bridge at different datum. Oct. 1, 1965, to Oct. 4, 1966, nonrecording gage, and Oct. 5, 1966, to Mar. 21, 1978, water-stage recorder at present site and datum. Mar. 22, 1978, to Apr. 23, 1981, water-stage recorder 1.5 mi upstream at different datum; Apr. 24 to Aug. 20, 1981, water-stage recorder at present site and datum; and Aug. 21, 1981, to Sept. 30, 1981, water-stage recorder 1.5 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 15-17, Dec. 10 to Feb. 25, Mar. 1-3, Aug. 25-27. Records fair except those for estimated daily discharges, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft. Diversions for irrigation of about 101,800 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--52 years, 583 ft^3/s, 422,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 31,000 ft^3/s, Feb. 19, 1943, maximum gage height, 12.27 ft, Mar. 16, 1978, backwater from ice; no flow on many days in 1950, 1960-61, and 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft^3/s and maximums(*):

Date	Time	Discharge, in ft^3/s	Gage height, in feet
Mar. 2	0400	unknown	*a 6.07
Aug. 23	0700	*1,710	4.51

a--result of backwater from ice.
Minimum discharge, 15 ft^3/s, July 24-28, Aug. 12.

Month	Second-foot days	Mean daily discharge (ft^3/s)	Maximum daily discharge (ft^3/s)	Minimum daily discharge (ft^3/s)	Discharge, in acre-feet
October 1989	4,718	152	230	90	9,360
November	7,116	237	341	104	14,110
December	2,923	94.3	214	30	5,800
January 1990	4,270	138	170	80	8,470
February	9,690	346	1,400	80	19,220
March	20,941	676	1,110	269	41,540
April	11,920	397	995	268	23,640
May	20,049	647	931	491	39,770
June	26,131	871	1,300	570	51,830
July	7,215	233	836	15	14,310
August	5,340	172	1,170	19	10,590
September 1990	3,019	101	183	71	5,990
1990 water year	123,332	338	1,400	15	244,600

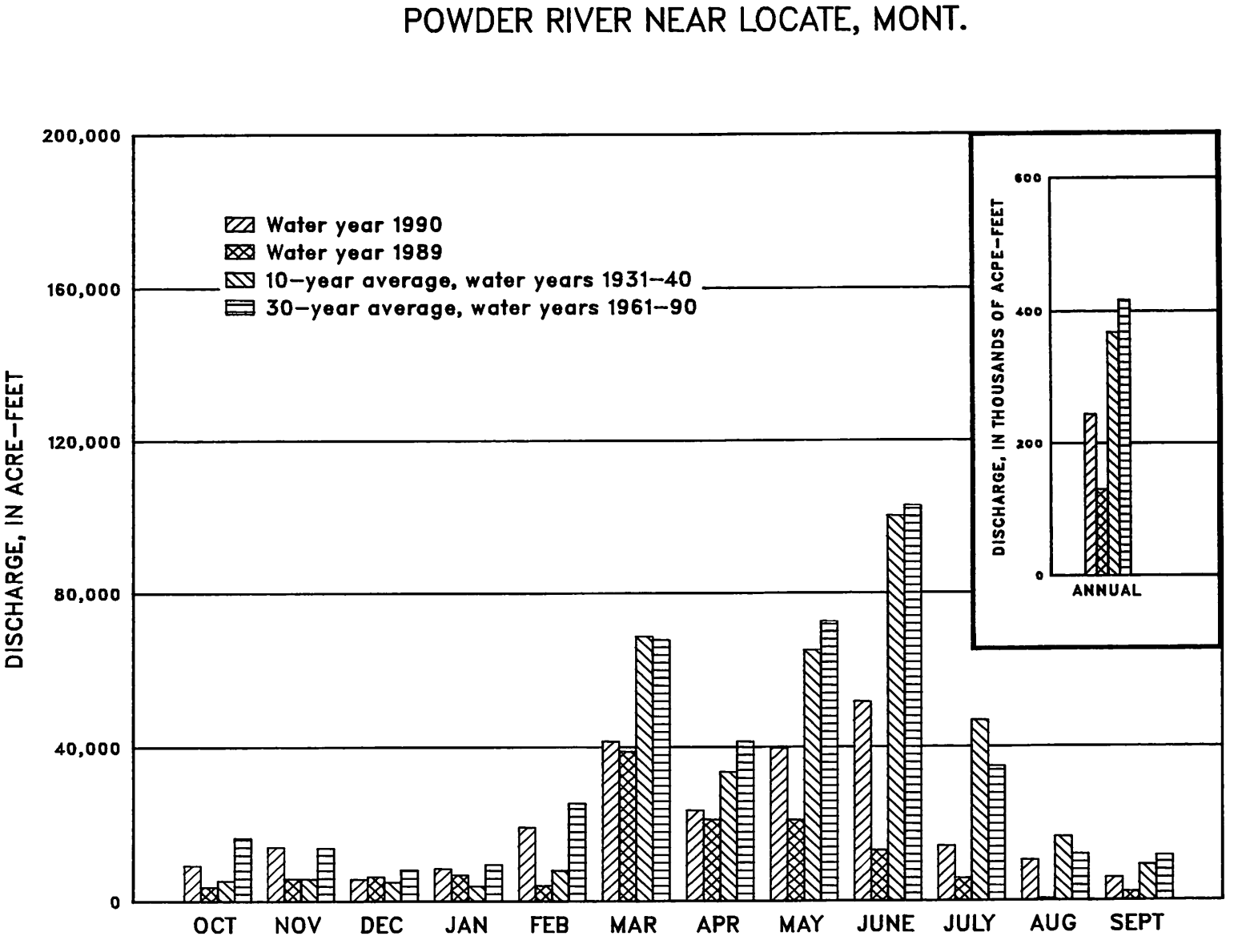


Figure 4.--Comparison of discharge of the Powder River during water year 1990 with discharge during water year 1989 and with 10-year and 30-year average discharges.

MONTHLY SUMMARY OF CONTENTS FOR COMPACT RESERVOIRS COMPLETED AFTER JANUARY 1, 1950

06258900 Boysen Reservoir, Wyo.

LOCATION.--Lat 43°25'00", long 108°10'37", in NW1/4 NW1/4 sec. 16, T. 5 N., R. 6 E., Fremont County, Hydrologic Unit 10080005, at dam on Wind River and 13 mi north of Shoshoni, Wyoming.

DRAINAGE AREA.--7,700 mi^2.

PERIOD OF RECORD.--October 1951 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is referenced to National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by rock-fill dam completed in October 1951. Storage began Oct. 11, 1951. Usable capacity, 742,100 acre-ft between elevation 4,657.00 ft, invert of penstock pipe, and 4,725.00 ft, top of spillway gate. Dead storage, 59,880 acre-ft below elevation 4,657.00 ft. Prior to Jan. 1, 1966, usable capacity was 757,800 acre-ft and dead storage was 62,000 acre-ft at same elevations. Crest of dam is at elevation 4,758 ft. Figures given herein represent usable contents. Water used for irrigation, flood control, and power development.

COOPERATION.--Elevations and capacity table furnished by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum usable daily contents, 862,500 acre-ft, July 6, 7, 1967, elevation, 4,730.83 ft; minimum usable daily since normal use of water started, 191,900 acre-ft, Mar. 18, 19, 1956, elevation, 4,684.18 ft, capacity table then in use.

EXTREMES FOR CURRENT YEAR.--Maximum usable contents, 605,800 acre-ft, Oct. 30, elevation, 4,717.57 ft; minimum usable, 485,000 acre-ft, June 5, elevation, 4,710.01 ft.

Month	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in contents, in acre-feet
September 30, 1989.	4,717.47	604,100	---
October 31.	4,717.51	604,800	+700
November 30	4,716.97	595,500	-9,300
December 31	4,714.93	561,500	-34,000
January 31, 1990.	4,712.94	529,700	-31,800
February 28	4,711.23	503,400	-26,300
March 31.	4,710.65	494,600	-8,800
April 30.	4,711.08	501,100	+6,500
May 31.	4,710.07	485,900	-15,200
June 30	4,713.76	542,700	+56,800
July 31	4,714.14	548,800	+6,100
August 31	4,713.27	535,000	-13,800
September 30, 1990.	4,713.13	532,700	-2,300
1990 water year			-71,400

06260300 Anchor Reservoir, Wyo.

LOCATION.--Lat 43°39'50", long 108°49'27", in sec. 26, T. 43 N., R. 100 W., Hot Springs County, Hydrologic Unit 10080007, at dam on South Fork Owl Creek, 2 mi downstream from Middle Fork, 3 mi southeast of Anchor, and 32 mi west of Thermopolis.

DRAINAGE AREA.--131 mi^2.

PERIOD OF RECORD.--November 1960 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is referenced to National Geodetic Vertical Datum of 1929 (U.S. Bureau of Reclamation benchmark).

REMARKS.--Reservoir is formed by concrete arch dam completed in 1960. Usable capacity, 17,160 acre-ft between elevation 6,343.75 ft, invert of river outlet, and 6,441.00 ft, spillway crest, not including 68 acre-ft below elevation 6,343.75 ft. Prior to Oct. 1, 1971, usable capacity was 17,280 acre-ft not including 149 acre-ft below the invert. Figures given herein represent usable contents. Water is used for irrigation of land in Owl Creek basin.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum usable daily contents, 9,250 acre-ft, July 4, 1967, elevation, 6,418.52 ft; no storage on many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 604 acre-ft, June 11, elevation, 6,364.50 ft; no storage most of year.

Month	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in contents, in acre-feet
September 30, 1989.	6,304.00	0	---
October 31.	6,304.00	0	0
November 30	6,350.00	148	+148
December 31	6,348.00	120	-28
January 31, 1990.	6,350.00	148	+28
February 28	6,348.50	128	-20
March 31.	6,300.00	0	-128
April 30.	6,362.00	492	+492
May 31.	6,364.00	580	+88
June 30	6,351.40	178	-402
July 31	6,352.60	204	+26
August 31	6,347.00	106	-98
September 30, 1990.	6,346.00	91	-15
1990 water year			+91

06286400 Bighorn Lake near St. Xavier, Mont.

LOCATION.--Lat 45°18'27", long 107°57'26", in SW1/4 SE1/4 sec. 18, T. 6 S., R. 31 E., Big Horn County, Hydrologic Unit 10080010, in block 13 of Yellowtail Dam on Bighorn River, 1.3 mi upstream from Grapevine Creek, 15.5 mi southeast of St. Xavier, and at river mile 86.6.

DRAINAGE AREA.--19,626 mi^2.

PERIOD OF RECORD.--November 1965 to current year (monthend contents only). Prior to October 1969, published as "Yellowtail Reservoir."

GAGE.--Water-stage recorder in powerhouse control room. Datum of gage is referenced to National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by thin concrete-arch dam; construction began in 1961; completed in 1967. Storage began Nov. 3, 1965. Usable capacity, 1,356,000 acre-ft between elevation 3,296.50 ft, river outlet invert, and 3,657.00 ft, top of flood control. Elevation of spillway crest, 3,593.00 ft. Normal maximum operating level, 1,097,000 acre-ft, elevation, 3,640.00 ft. Minimum operating level, 483,400 acre-ft, elevation 3,547.00 ft. Dead storage, 16,010 acre-ft below elevation 3,296.50 ft. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

COOPERATION.--Elevations and capacity table furnished by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 1,346,000 acre-ft, July 6, 1967, elevation, 3,656.43 ft; minimum since first filling, 641,900 acre-ft, Apr. 14, 1989, elevation, 3,583.30 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,001,000 acre-ft, Aug. 6, elevation, 3,635.57 ft; minimum, 693,100 acre-ft, Apr. 13, elevation, 3,593.39 ft.

Month	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in contents, in acre-feet
September 30, 1989	3,621.25	867,300	---
October 31	3,630.56	948,900	+81,600
November 30	3,629.95	943,000	-5,900
December 31	3,620.83	864,000	-79,000
January 31, 1990	3,610.94	793,200	-70,800
February 28	3,602.33	731,600	-61,600
March 31	3,595.73	705,400	-26,200
April 30	3,596.15	707,700	+2,300
May 31	3,606.87	767,900	+60,200
June 30	3,629.32	937,000	+169,100
July 31	3,635.45	1,000,000	+63,000
August 31	3,633.27	976,400	-23,600
September 30, 1990	3,632.87	972,200	-4,200
1990 water year			+104,900

MONTHLY SUMMARY OF CONTENTS FOR COMPACT RESERVOIRS EXISTING ON JANUARY 1, 1950

The extent, if any, of the use of reservoirs in this section which may be subject to Compact allocations was not determined. As a matter of hydrologic interest the monthend contents in acre-feet of four reservoirs are given. The first three reservoirs are in the Bighorn River basin, Wyoming, and data on contents were furnished by the U.S. Bureau of Reclamation. The Tongue River Reservoir in Montana is operated under the supervision of the Water Resources Division of the Montana Department of Natural Resources and Conservation, which furnished the operating data.

	Contents, in acre-feet			
Month	06224500 a/Bull Lake	b/Pilot Butte Reservoir	06281500 c/Buffalo Bill Reservoir	06307000 d/Tongue River Reservoir
September 30, 1989. . .	106,900	19,550	221,500	19,940
October 31.	105,500	25,660	204,100	16,100
November 30	105,700	24,620	216,700	22,060
December 31	105,100	24,460	222,000	28,430
January 31, 1990. . . .	104,000	24,460	226,200	34,800
February 28	102,900	24,220	224,500	35,270
March 31.	101,700	22,460	231,100	35,800
April 30.	104,700	27,660	242,700	33,600
May 31.	82,400	15,120	203,000	44,150
June 30	113,700	24,540	346,600	65,580
July 31	140,400	26,980	304,900	---
August 31	117,100	20,520	225,100	---
September 30, 1990. . .	82,800	18,580	162,600	---
Change in contents during water year. .	-24,100	-970	-58,900	---

a/ Usable contents, from revised capacity table effective October 1, 1965. Dead storage is 722 acre-ft.

b/ Usable contents. Dead storage is 5,360 acre-ft.

c/ Usable contents, from revised capacity table based on survey of 1959. Contents prior to October 1960 based on survey of 1941. Dead storage is negligible.

d/ Usable contents. Dead storage is 1,400 acre-ft. Contents based upon sedimentation surveys of October 1948.

RULES AND REGULATIONS FOR ADMINISTRATION OF THE YELLOWSTONE RIVER COMPACT

A compact, known as the Yellowstone River Compact, between the States of Wyoming, Montana, and North Dakota, having become effective on October 30, 1951, upon approval of the Congress of the United States, which apportions the waters of certain interstate tributaries of the Yellowstone River which are available after the appropriative rights existing in the States of Wyoming and Montana on January 1, 1950 are supplied, and after appropriative rights to the use of necessary supplemental water are also supplied as specified in the Compact, is administered under the following rules and regulations subject to the provisions for amendment revision or abrogation as provided herein.

Article I. Collection of Water Records

A. It shall be the joint and equal responsibility of the members of the States of Wyoming and Montana to collect, cause to be collected, or otherwise furnish records of tributary streamflow at the points of measurement specified in Article V (B) of the Compact, or as near thereto as is physically or economically feasible or justified.

1. Clarks Fork

   The gaging station known as Clarks Fork near Silesia, Montana and located in NW1/4 SE1/4 sec. 1, T. 4 S., R. 23 E., shall be the point of measurement for the Clarks Fork.

2. Bighorn River (exclusive of Little Bighorn River)

   The gaging station known as the Bighorn River above Tullock Creek, near Bighorn, Montana, and located in SE1/4 SE1/4 NE1/4 sec. 3, T. 4 N., R. 34 E., shall temporarily be the designated point of measurement on that stream. The flow of the Little Bighorn River as measured at the gaging station near Hardin, Montana, and located in SE1/4 NE1/4 NE1/4 sec. 19, T. 1 S., R. 34 E., shall be considered the point of measurement for that stream, except that if or when satisfactory records are not available, the records for the nearest upstream station with practical corrections for intervening inflow or diversion shall be used.

3. Tongue River

   The gaging station known as the Tongue River at Miles City, Montana, and located in NE1/4 NE1/4 SE1/4 sec. 23, T. 7 N., R. 47 E., shall temporarily be the point of measurement for that stream.

4. Powder River

The gaging station known as the Powder River near Locate, Montana, and located in NW1/4 SW1/4 sec. 14, T. 8 N., R. 51 E., shall temporarily be the designated point of measurement for that stream.

B. Records of total annual diversion in acre-feet above the points of measurement designated in the Compact for irrigation, municipal, and industrial uses developed after January 1, 1950, shall be furnished by the members of the Commission for their respective States, at such time as the Commission deems necessary for interstate administration as provided by the terms of the Compact. Providing that if it be acceptable to the Commission, reasonable estimates thereof may be substituted.

C. Annual records of the net change in storage in all reservoirs, not excluded under Article V (E) of the Compact, above the point of measurement specified in the Compact and completed after January 1, 1950, and the annual net change in reservoirs existing prior to January 1, 1950, which is used for irrigation, municipal, and industrial purposes developed after January 1, 1950, shall be the primary responsibility of the member of the Commission in whose State such works are located; providing such data are not furnished by Federal agencies under the provisions of Article III (D) of the Compact, or collected by the Commission.

Article II. Office and Officers

A. The office of the Commission shall be located at the office of the Chairman of the Commission.

B. The Chairman of the Commission shall be the Federal representative as provided in the Compact.

C. The Secretary of the Commission shall be as provided for in Article III of these rules.

D. The credentials of each member of the Commission shall be placed on file in the office of the Commission.

Article III. Secretary

A. The Commission, subject to the approval of the Director of the United States Geological Survey, shall enter into cooperative agreements with the U.S. Geological Survey for such engineering and clerical services as may reasonably be necessary for the administration of the Compact. Said agreements shall provide that the Geological Survey shall:

1. Maintain and operate gaging stations at or near the points of measurement specified in Article V (A) of the Compact.

2. Assemble factual information on stream flow, diversion, and reservoir storage for the preparation of an annual report to the Governors of the signatory States.

3. Make such investigations and reports as may be requested by the Commission in aid of its administration of the Compact.

B. The Geological Survey shall act as Secretary to the Commission.

Article IV. Budget

A. At the annual meeting of each even-numbered year or prior thereto, the Commission shall adopt a budget for operation during the ensuing biennium beginning July first. Such budget shall set forth the total cost of construction, maintenance and operation of gaging stations, the cost of engineering and clerical aid, and other necessary expenses excepting the salaries and personal expenses of the Commissioners. On odd-numbered years revisions of the budget shall be considered.

B. It shall be the obligation of the Commissioners of the States of Montana and Wyoming to endeavor to secure from the Legislature of their respective States sufficient funds with which to meet the obligations of this Compact, except insofar as provided by the Federal government.

Article V. Meetings

An annual meeting of the Commission shall be held each November at some mutually agreeable point in the Yellowstone River Basin for consideration of the annual report for the water year ending the preceding September 30th, and for the transaction of such other business consistent with its authority; provided that by unanimous consent of the Commission the date and place of the annual meeting may be changed. Other meetings as may be deemed necessary shall be held at a time and place set by mutual agreement, for the transaction of any business consistent with its authority.

No action of the Commission shall be effective until approval by the Commissioners for the States of Wyoming and Montana.

Article VI. Amendments, Revisions and Abrogations.

The Rules and Regulations of the Commission may be amended or revised by a unanimous vote at any meeting of the Commission.

Gary Fritz
Commissioner for Montana

George L. Christopulos
Commissioner for Wyoming

ATTESTED:

L. Grady Moore
Federal Representative

Adopted November 17, 1953
Amended December 16, 1986

RULES FOR ADJUDICATING WATER RIGHTS ON INTERSTATE DITCHES

Article I. Purpose

The purpose of this rule is to determine and adjudicate, in accordance with the laws of Montana and Wyoming, those pre-Compact (January 1, 1950) water rights diverting from the Powder, Tongue, Bighorn and Clarks Fork Rivers and their tributaries where the point of diversion is in one State and the place of use is in the other State which have not yet been adjudicated.

Article II. Authority

In accordance with the Yellowstone River Compact, the State of Montana and the State of Wyoming, being moved by consideration of interstate comity, desire to remove all causes of present and future controversy between the States and between persons in one State and persons in another State with respect to these interstate ditches. Article III (E) of the Compact provides the Yellowstone River Compact Commission with the authority "...to formulate rules and regulations and to perform any act which they may find necessary to carry out the provisions of this Compact...."

Article III. Definitions

The terms defined in the Yellowstone River Compact apply as well as the following definitions:

1. "Acre-feet" means the volume of water that would cover 1 acre of land to a depth of 1 foot.

2. "Cfs" means a flow of water equivalent to a volume of 1 cubic foot that passes a point in 1 second of time and is equal to 40 miners inches in Montana.

3. "Interstate Ditches" shall include ditches and canals which convey waters of the Bighorn, Tongue, Powder, and Clarks Fork Rivers and their tributaries across the Wyoming-Montana State line where the water is diverted in one State and the place of use is in the other State.

4. "Department of Natural Resources and Conservation," hereafter called the "Department," means the administrative agency and Department of the Executive Branch of the Government of Montana created under Title II, Chapter 15, MCA which has the responsibility for water administration in that State.

5. "Water Court" means a Montana District Court presided over by a water judge, as provided for in Title III, Chapter 7, MCA.

6. "State Engineer" shall be the current holder of the position created by the Wyoming Constitution as Chief Water Administration Official for the State of Wyoming.

7. "Board of Control," hereinafter called the "Board," is defined as the constitutionally created water management agency in Wyoming composed of the four Water Division Superintendents and the State Engineer.

8. "Superintendent" is the member of the Board who is the water administration official for the Water Division where the interstate ditch is located. (The two Water Divisions in the Yellowstone River drainage are Water Division Numbers Two and Three.)

9. "Date of Priority" shall mean the earliest date of actual beneficial use of water, unless evidence and circumstances pertaining to a particular claim establish an earlier date.

10. "Point of Diversion" is defined to be the legal land description by legal subdivision, section, township, and range of the location of the diversion structure for an interstate ditch from a natural stream channel.

11. "Place of Use" is defined to be the legal land description (legal subdivision, section, township, and range) of the lands irrigated by an interstate ditch.

12. "Person" is defined as an individual, a partnership, a corporation, a municipality or any other legal entity, public or private.

13. "Claimant" is defined as any person claiming the use of water from an interstate ditch as herein defined.

Article IV. Procedures

The procedures for determining and adjudicating water rights associated with interstate ditches shall be categorized as follows: (A) Where the point of diversion is in Wyoming and place of use in Montana, and (B) Where the point of diversion is in Montana and place of use in Wyoming.

A. Wyoming Procedure

1. The Yellowstone River Compact Commission will provide a claim form to be completed by the claimant that will describe the location and point of diversion and land being irrigated, the priority date claimed, method of irrigation and such other information required to describe the claim. (A sample form for this purpose is attached.)

2. The Yellowstone River Compact Commission will send the claim form to water users on the interstate ditches.

3. Water users will complete the claim form and file it with the Yellowstone Compact Commission, which, when found to be correct and complete, will be forwarded to the Board for verification.

4. Upon receipt of the form, the Board shall forward it to the appropriate Superintendent, who, in cooperation with the Department, will validate the information including the use that has been made of the water, the number of acres and location of lands being irrigated, the priority date, and all other relevant information. The Superintendent and the Department will utilize aerial photography and other information to have prepared a reproducible map showing the location of the ditch system, lands irrigated, point of diversion, etc., of the claim.

5. After the validation procedure, the Superintendent will hold a hearing, after appropriate notice and advertisement, at which time the claimant shall describe, in detail, the use that has been made of the water and the lands that are being irrigated, establish a priority date, etc. Costs incurred in advertising shall be paid by the claimant. If a single hearing is held to consider several claims, the costs of advertising shall be shared equally among the claimants. Anyone who opposes the claim shall appear and state the reasons, if any, for opposition to the claim. If there is no opposition to the claim, cost incurred in holding the hearing shall be paid by the claimant. If protestants do appear and oppose the claim, hearing costs will be paid 50 percent by the claimant and 50 percent by the protestant, or if there is more than one protestant, the remaining 50 percent shall be shared equally among the protestants.

6. At the conclusion of the hearing, the Superintendent shall forward the record to the Yellowstone River Compact Commission with his findings and recommendations. The Yellowstone River Compact Commission will make the

determination of the amount of the right, the location, and the priority date, and then send the record to the Board.

7. The Board shall review the record and integrate it into its water rights system. Upon entry of the record by the Board, the information shall be forwarded to the Department and the Chairman of the Yellowstone River Compact Commission.

8. Upon the entry of the right into the Board's records, it will have the following attributes:

   a. The right will be a Wyoming water right with a priority date as established by this procedure.

   b. The amount of the right will be determined as provided by Wyoming law.

B. Montana Procedure

1. The Yellowstone River Compact Commission will provide a claim form to be completed by the claimant that will describe the location and point of diversion and land being irrigated, the priority date claimed, method of irrigation and such other information required to describe the claim.

2. The Commission will send the claim form to water users on the interstate ditches.

3. Water users will complete the claim form and file it with the Yellowstone River Compact Commission, which, when found to be correct and complete, will be forwarded to the Department for verification.

4. Upon receipt of the form, the Department, in cooperation with the Wyoming State Engineer's Office, will validate the information, including the use that has been made of the water, the number of acres and location of lands being irrigated, the priority date, and all other relevant information. The appropriate Superintendent and the Department will utilize aerial photographs and other information to have prepared a reproducible map showing the location of the ditch system, land irrigated, point of diversion, etc., of the claim.

5. The Department will then forward the record to the Yellowstone River Compact Commission with its findings and recommendations. Upon approval by the Commission, the record shall be submitted to the Montana Water Court for adjudication. A duplicate record will be forwarded to the Wyoming State Engineer's Office, the Board, and the Chairman of the Yellowstone River Compact Commission upon adjudication.

6. Upon adjudication of the right by the Montana Water Court, it will have the following attributes:

   a) The right will be a Montana water right with a priority date as established by this procedure.

   b) The amount of the right will be determined as provided by Montana law.

Article V. Exclusions

A. These rules recognize the limitation in Article VI of the Yellowstone River Compact regarding Indian water rights.

B. These rules shall not be construed to determine or interpret the rights of the States of Wyoming and Montana to the waters of the Little Bighorn River.

Article VI. Claim Form Submission Period

All claims must be submitted to the Yellowstone River Compact Commission, c/o District Chief, United States Geological Survey, 821 E. Interstate, Bismarck, ND 58501, within 90 calendar days after the claimant has received the claim form from the Commission. The blank claim form will be sent certified mail to the water user and the submission period of 90 calendar days will begin with the next day following receipt of the form, as evidenced by the certified mail receipt card. For good cause shown in writing, an extension of time beyond the 90 days for submittal may be obtained from the Commission.

YELLOWSTONE RIVER COMPACT COMMISSION

WYOMING

GORDON W. FASSETT
STATE ENGINEER
HERSCHLER BUILDING
4TH FLOOR EAST
CHEYENNE, WYOMING 82002
(307) 777-7354

UNITED STATES

WILLIAM F. HORAK
CHAIRMAN
U.S. GEOLOGICAL SURVEY
821 E. INTERSTATE AVENUE
BISMARCK, NORTH DAKOTA 58501
(701) 250-4601

MONTANA

GARY FRITZ
ADMINISTRATOR, WATER RESOURCES DIVISION
DEPT. OF NATURAL RESOURCES & CONSERVATION
1520 EAST SIXTH AVENUE
HELENA, MONTANA 59620
(406) 444-6603

YELLOWSTONE RIVER COMPACT COMMISSION

CLAIM FORM FOR INTERSTATE DITCHES

1. Name of ditch or canal: _____

2. Source of water supply: _____

   Tributary of _____

3. Name of claimant: _____

   Address _____

   City _____ State _____ Zip Code _____

   Home Phone No. _____ Business Phone No. _____

4. Person completing form: _____

   Address _____

   City _____ State _____ Zip Code _____

   Home Phone No. _____ Business Phone No. _____

5. Method of irrigation: _____

6. Point of diversion: County _____ State _____

   Headgate located in the ___¼ ___¼, Section ____, T.___R.____

   (a) Description of headgate: (Briefly describe the materials and general features, date constructed or last known work, general condition.) _____

   _____

   _____

(b) Describe water measuring device: _____

_____

_____

(c) If the point of diversion is in Montana:

1. What flow rate has been claimed?

_____ ☐ cubic feet per second

☐ gallons per minute

☐ miner's inches

2. What volume of water has been claimed?

_____ acre-feet

7. Dimensions of ditch at headgate: Width at top (at waterline) _____ feet; width at bottom _____ feet; side slopes (vertical:horizontal) _____:_____; depth of water _____ feet; grade _____ feet per mile.

8. Place of use and acres irrigated: County_____ State _____ Give legal subdivisions of land owned by you on which water is being used (acres claimed): An example field is shown in the first line.

T.	R.	SEC.	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	MW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
58N	95W	18			25.1											10.2			35.3

9. Describe any additional uses of water claimed from the ditch: _____

10. Date of first beneficial use of water (priority date) on lands described above for _____ Ditch is_____ (mo/day/yr) and shall be the same for all lands claimed on this form.

11. Has irrigation water been diverted onto all lands shown in the above tabulation each year since completion of works?__ If not, state exceptions and reasons therefore: _____

_____

_____

12. Attach documentary evidence or affidavits showing your ownership or control of the above lands, as well as the historic use of water on these lands. _____

_____

_____

13. What permit or claim numbers have been assigned to known records filed with either the Wyoming State Engineer's Office or the Montana Department (DNRC) for irrigating the above lands? _____

_____

_____

14. Have personnel in the Wyoming State Engineer's Office or the Montana Department (DNRC) been contacted to obtain the information given in No. 13? ( ) Yes ( ) No

15. Describe any flumes or pipelines in the ditch conveyance system:_____

_____

_____

16. Describe ordinary annual period of use: _____ to _____
(mo/day) (mo/day)

_____.

17. Attach copies of aerial photographs, U. S. Geological Survey maps or other such documents showing the ditch and lands irrigated that give evidence to this claim and may be useful to the Commission.

* * * * * * * * * * *

State of _____)
) SS
State of _____)

I, _____, having been duly sworn, depose and say that I, being of legal age and being the claimant of this claim for a water right, and the person whose name is signed to it as the claimant, know the contents of this claim and the matters and things stated there are correct.

_____

_____

Subscribed and sworn before me, this ____day of _____, 19__.

_____
Notary Public

Residing at: _____

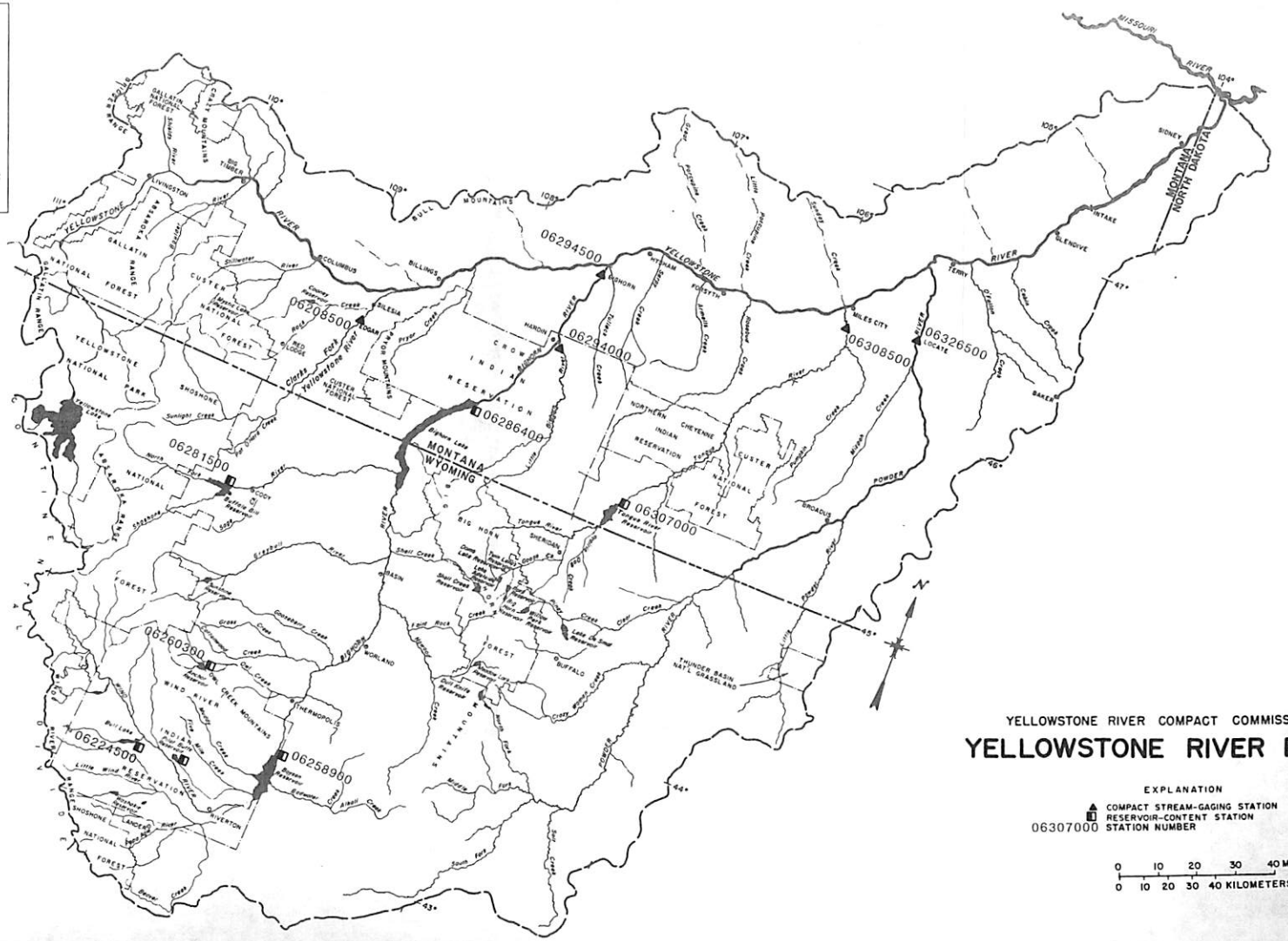
My commission expires: _____

CONVERSION TABLE

Multiply inch-pound units	By	To obtain SI units
	Length	
feet (ft)	0.3048	meters (m)
miles (mi)	1.609	kilometers (km)
	Area	
acres	4,047	square meters (m^2)
	0.4047	*hectares (ha)
	0.4047	square hectometer (hm^2)
	0.004047	square kilometers (km^2)
square miles (mi^2)	2.590	square kilometers (km^2)
	Volume	
cfs-day or second-foot day (ft^3/s-day)	2,447	cubic meters (m^3)
	0.002447	cubic hectometers (hm^3)
cubic feet	0.02832	cubic meters
acre-feet (acre-ft)	1,233	cubic meters (m^3)
	0.001233	cubic hectometers (hm^3)
	0.000001233	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	28.32	liters per second (L/s)
	28.32	cubic decimeters per second (dm^3/s)
	0.02832	cubic meters per second (m^3/s)
acre-feet per year (acre-ft/yr)	1,233	cubic meters per year (m^3/yr)
	0.001233	cubic hectometers per year (hm^3/yr)
	0.000001233	cubic kilometers per year (km^3/yr)

*The unit hectare is approved for use with the International System (SI) for a limited time. See National Bureau of Standards Special Bulletin 330, p. 12, 1977 edition.

LOCATION MAP



YELLOWSTONE RIVER COMPACT COMMISSION

YELLOWSTONE RIVER BASIN

EXPLANATION

▲ COMPACT STREAM-GAGING STATION
▮ RESERVOIR-CONTENT STATION
06307000 STATION NUMBER

0 10 20 30 40 MILES
0 10 20 30 40 KILOMETERS

MAP SHOWING LOCATIONS OF COMPACT STREAM-GAGING AND RESERVOIR-CONTENT STATIONS