

YELLOWSTONE RIVER

COMPACT COMMISSION

FIFTY-SECOND ANNUAL REPORT

2003

**YELLOWSTONE RIVER COMPACT COMMISSION
DENVER FEDERAL CENTER, BUILDING 53, ROOM F-1200
LAKEWOOD, COLORADO 80225**

Honorable David Freudenthal
Governor of the State of Wyoming
Cheyenne, Wyoming 82002

Honorable Judy Martz
Governor of the State of Montana
Helena, Montana 59620

Honorable John Hoeven
Governor of the State of North Dakota
Bismarck, North Dakota 58501

Dear Governors:

Pursuant to Article III of the Yellowstone River Compact, the Commission submits the following fifty-second annual report of activities for the period ending September 30, 2003.

Members of the Yellowstone River Compact Commission convened their fifty-second annual meeting on December 16, 2003, at 9:30 a.m. in Billings, Montana. In attendance were Mr. James Kircher, U.S. Geological Survey, Chairman and Federal Representative; Mr. Jack Stults, Administrator, Water Resources Division, Montana Department of Natural Resources and Conservation and Commissioner for Montana; and Mr. Patrick Tyrrell, Wyoming State Engineer and Commissioner for Wyoming. Also in attendance were Ms. Sue Lowry, Ms. Jodee Pring, Mr. Mike Whitaker, and Mr. Loren Smith, Wyoming State Engineer's Office; Mr. Richard Moy, Mr. Keith Kerbel, Mr. Kevin Smith, and Mr. James Robinson, Montana Department of Natural Resources and Conservation; Ms. Candace West, Montana Department of Justice; Mr. Roy Kaiser, Natural Resources Conservation Service; Mr. Tim Felchle, Mr. Gordon Aycock, and Mr. Jeremy Giovando, Bureau of Reclamation; Mr. Orrin Ferris, HKM Engineering; Mr. Art Hayes, Jr. and Mr. Roger Muggli, Tongue River Water Users Association; Mr. Mark Fix, Northern Plains Resource Council, and Mr. Robert Davis, U.S. Geological Survey.

Mr. Kircher called the meeting to order. All attendees introduced themselves.

Mr. Davis presented budget information for the program of streamflow data collection and preparation of the annual report. The program cost was \$66,900 for Federal fiscal year 2003 and will be \$70,000 for fiscal year 2004. Estimates of costs for future years were presented, based on an approximate 5-percent inflation factor per year. One-fourth of the cost is provided by the State of Wyoming, one-fourth by the State of Montana, and one-half by the U.S. Geological Survey through the Cooperative Water Program. Mr. Stults and Mr. Tyrrell asked about the major cost factors for the program and the reasons for the inflationary increases. Mr. Davis replied that the major cost factors are salaries and travel, both of which increased during the year. The program for fiscal year 2004 was approved.

Mr. Davis reported that streamflow during water year 2003 was 93 percent of average for the Clarks Fork Yellowstone River, 43 percent of average for the Bighorn River (adjusted for flow in the Little Bighorn River and change in contents in Bighorn Lake), 65 percent of average for the Tongue River, and 48 percent of average for the Powder River. These streamflow percentages are all higher than the associated percentages for water year 2002. Total streamflow in the four rivers during water year 2003, adjusted for flow in the Little Bighorn River and change in contents in Bighorn Lake, was 2,174,000 acre-feet. For

comparison the total adjusted streamflow in the four rivers was 1,685,000 acre-feet in water year 2002 and 2,053,000 acre-feet in water year 2001.

Reservoir storage increased during water year 2003 in Bighorn Lake, Boysen Reservoir, Anchor Reservoir, Bull Lake, Pilot Butte Reservoir, Buffalo Bill Reservoir, and Tongue River Reservoir. The contents and amounts of increase are listed in the report. Total usable contents of these reservoirs at the end of water year 2003 was 1,651,800 acre-feet, which is an increase of 405,500 acre-feet from the end of water year 2002. Mr. Whitaker reported that storage in mountain reservoirs in the Tongue River drainage was 8,947 acre-feet, or a carryover of about 38 percent of capacity. Mr. Aycock asked if the reservoir storage due to the enlargements of Buffalo Bill and Tongue River Reservoirs should also be included. Although the split of original and post-Compact storage amounts was not readily available, the Commissioners decided that such information, along with storage information for other reservoirs to be specified, should be made available for water year 2004. The other reservoirs may include Upper and Lower Sunshine, Greycliff Valley, Twin Lakes, and Tie Hack Reservoirs. Mr. Whitaker and Mr. Smith agreed to provide the information for next year's report for the additional reservoirs.

Mr. Stults stated that Montana continues to experience drought conditions statewide and the impacts on livestock and crops have been severe. Montana has expended considerable effort to reduce actual consumption of water. Mr. Tyrrell stated that much of Wyoming also continues to experience drought, although conditions appear to be improving slightly. He stated that Wyoming has also expended considerable effort to reduce consumption of water and help alleviate water shortages, particularly for municipalities through issue of temporary permits and temporary sharing of water rights.

Ms. Lowry reported that the Technical Committee meeting in March 2003 (minutes appended) resulted in a sharing of information and forecasts of flow for several sites. Additional forecasts will be developed for Goose Creek and the upper Tongue River basins in the future. Mr. Kaiser elaborated on the forecasting plans and reported that snowpack in the upper Tongue River basin currently is about 92 percent of average, which is similar to snowpack in December 2002. Mr. Kerbel reported that the 2004 meeting of the Technical Committee is scheduled for April 14 in Sheridan, Wyoming. Mr. Stults asked if the Committee is helping to provide better information and forecasting. Ms. Lowry replied that the Committee is helping in that regard but is still developing the needed capabilities. Mr. Kerbel and Mr. Kaiser concurred and Mr. Kerbel encouraged the participation of water users. Mr. Tyrrell stated that the forecasts for basins of interest were particularly useful. Mr. Kircher asked if the Bureau of Reclamation should be involved. Mr. Whitaker stated that efforts in 2004 would be focused on the Tongue and Powder River basins and, therefore, the Bureau would not need to be involved. The Commissioners discussed the importance of real-time streamflow data at a number of sites. Mr. Stults emphasized the need to support funding for streamflow programs, namely the National Streamflow Information Program (NSIP) and the Cooperative Water Program, of the U.S. Geological Survey. Mr. Felchle emphasized the importance of climate stations and data, and Mr. Fix reported that the Bureau of Land Management might be adding some climate stations in the area. The Commissioners also discussed the need to compare the forecasts to actual runoff. Mr. Kaiser agreed to provide that information to Mr. Davis prior to future meetings.

The Commissioners also discussed the possibility of the Commission meeting each spring. The Commissioners decided to meet in Sheridan on April 15, 2004, directly after the Technical Committee meeting. Ms. Lowry will make the necessary arrangements. The Commissioners then discussed the possibility of publishing the annual report soon after the spring meetings. This issue will be discussed again at the April 15 meeting.

Mr. Tyrrell reported that 2,940 coal-bed methane well applications were received by Wyoming during the year ending June 30, 2003. This number is about one-half the number received in 2002. Applications for small reservoirs during 2003 numbered about 400, which is a decrease from 2002. Small-reservoir capacity has increased significantly in some basins and changed minimally in others, such as the Tongue River basin. Many of the reservoir applications have been for off-channel storage of produced water.

All of these temporary filings need to consider maintaining downstream water needs and have to include plans for disposition after production ends. Mr. Muggli expressed concern about the effects on downstream water flow and quality and the overall safety of the reservoirs. Mr. Tyrrell replied that Governor Freudenthal's office is developing mechanisms for considering and addressing concerns related to development and that Wyoming is trying to ensure proper operation and disposition of produced water to minimize effects. Mr. Whitaker added that Wyoming is trying to obtain an additional reservoir inspector and that many of the new reservoirs are actually reconstructions of existing ponds. Mr. Hayes inquired about limits on seasonal use of water in Wyoming. Mr. Whitaker responded that much of the produced water from the small reservoirs is applied to land for disposal rather than for irrigation. Mr. Muggli restated concern about downstream effects on water flow and quality and requested that consideration be given to the potential effects.

Mr. Moy reported that the EIS for coal-bed methane development in Montana is complete. Permits have been issued for 235 wells and an application from the same production company for an additional 175 wells is anticipated. Much of the production water is or will be used for stock watering, land application, and dust abatement or provided to a coal mine for use. Another application for 135 wells by another company is anticipated, with plans for treatment of much of the production water by an ion-exchange process before disposal to the Tongue River. The Montana Department of Environmental Quality is developing a water-quality model of the Tongue River through a contractor. Mr. Stults recommended additional discussion occur at the meeting in April 2004. Ms. West expressed her perception of the need for the Commission to consider water quality as well as water flow with regard to the Compact. Mr. Tyrrell confirmed that both aspects are being considered.

Mr. Davis reported that additional monitoring of surface-water flow and quality will begin this year at six sites on the Tongue River and at five sites near the mouths of the major tributaries. The monitoring will include collection of discrete water-quality samples as well as measurement of specific conductance on a continuous basis. Sodium-adsorption ratio (SAR) will be estimated from specific conductance if reasonably accurate statistical relationships can be established. Experimental instrumentation will be developed to analyze onsite for calcium, magnesium, and sodium concentrations. If the instrumentation development is successful, SAR will also be calculated for at least one site directly from the onsite analytical results. To the extent possible, information from the monitoring will be provided online on a real-time basis.

Mr. Tyrrell reported on water rights within the Bighorn Canyon National Recreation Area. Wyoming plans to cancel water rights for land under the high-water line of Bighorn Lake and will be examining rights for about 2,600 acres above the high-water line. The result, under the court decree, is for the rights to be merged with existing Bureau of Reclamation rights. The total amount of annual water use under consideration is about 10,000 acre-feet, mostly for irrigation. Wyoming plans to work with Montana and the Bureau of Reclamation before making any final decisions.

Mr. Kerbel reported on Montana's adjudication program for the Yellowstone basin. A temporary preliminary decree was issued on November 14, 2003 for basin 42KJ (along the middle parts of the Yellowstone River basin) in Montana and the comment period will extend through May 12, 2004. Examination of water rights for basins 43P and 43O (Bighorn and Little Bighorn River basins) is nearing completion. Examination of water right claims for area 42C (lower Tongue River basin) will commence next month. Montana is currently awaiting approval from the chief water judge to begin the examination of basin 42B (upper Tongue River and Hanging Woman Creek basins). Preliminary (interlocutory) decrees issued by the Montana Water Court for the Gallatin and Musselshell River basins are being enforced on a trial basis. In the Yellowstone River basin, Montana Department of Natural Resources and Conservation, Water Resources Division staff have been working with the Montana Water Court to prepare the decree on basin 43BV (Sweet Grass Creek, a tributary of the Yellowstone near Big Timber) for trial enforcement. This decree supplants a much older decree.

Ms. Pring reported on the Wyoming Water Planning Program. Evaluations of the Northeast and Powder/Tongue River basins are complete and the information is available online at <http://waterplan.state.wy.us>. Evaluation of the Wind/Bighorn River basin is near completion and the information will be available online at the same address in the near future. Basin advisory groups meet every four months. Areas that have already been evaluated will be considered for re-evaluation as time and priorities allow.

Mr. Kerbel reported that the Montana-Crow Tribe Water Compact was ratified on June 22, 1999, and is being reviewed by the current tribal administration. There may be a request by the current tribal administration for some minor changes to the Compact. The present compact still needs Congressional approval followed by final ratification by the Tribe. The Crow Tribe and the Northern Cheyenne Tribe are in the process of developing tribal water codes.

Mr. Kircher reported that the Yellowstone River Basin National Water-Quality Assessment (NAWQA) project continues in a low-intensity phase with monitoring at three sites. Four reports from the project are anticipated to be published in 2004. The project currently is scheduled to resume high-intensity activity in 2007.

The Commissioners introduced new participants, namely Mr. Loren Smith of the Wyoming Engineer's Office and Mr. Kevin Smith of the Montana Department of Natural Resources and Conservation.

Mr. Tyrrell provided a number of maps of the Wyoming part of the Yellowstone River basin to Mr. Kerbel.

The next meeting of the Commission is scheduled for April 15, 2004 in Sheridan, Wyoming.

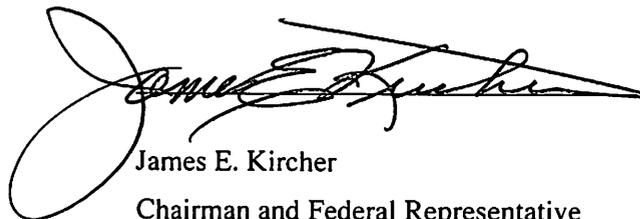
The meeting adjourned at 1:00 p.m.



Patrick T. Tyrrell
Commissioner for Wyoming



Jack Stults
Commissioner for Montana



James E. Kircher
Chairman and Federal Representative

Minutes of the Yellowstone River Compact Commission Technical Work Group
March 25, 2003
Sheridan, WY

<u>Name</u>	<u>Representing</u>	<u>email</u>
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Sue Lowry	WY State Engineer's Office	slowry@state.wy.us

(Action items are shown in BOLD)

- A. Introductions: Sue started the meeting and everyone introduced themselves.
- B. Sue recapped the four objectives that the Yellowstone Commission had directed the Technical Work Group to explore at their December 3, 2002 Commission meeting:
 - 1. Better understanding of the forecasting methods used by the NRCS and the NWS,
 - 2. Share information about the hydrology and general characteristics of the basin,
 - 3. Explore timing/efficiency issues among storage and direct flow uses in the basin, and
 - 4. Determine if there are any "Next Steps" or recommendations to be made from the Technical Group to the full Commission.

Keith Kerbel added that he felt the Commission had asked us to look at how good are the forecasts that are used and can they be improved. We should also be looking at whether we require more gages in the basin or are the ones we have in best locations. Keith also challenged the group to look on a more basin-wide view rather than just thinking about the stateline.

- C. Agency Reports of the information they collect:

USGS

Bob and Wayne went through handouts (attached) showing the location of active and non-active streamflow gages and also noted which were annual versus those only operated seasonally. The locations of these gages and where they were situated relative to the diversion and storage facilities in Wyoming were discussed. Roy reiterated the importance of maintaining long-term streamflow gages and recommended that this Work Group send a strong message to the Commission that streamflow data collection is important to any improvement in our forecasting abilities in the basin.

NRCS

Roy and Dave described the process for forecasting the runoff volumes for Tongue River at Dayton and the inflow to Tongue River Reservoir. Roy also takes the seasonal volume forecasts and tries to estimate the timing of that volume runoff into a hydrograph. The NRCS Forecast Center in Portland is reviewing their forecast models for several river basins across the west, and there is an interest in getting more accurate diversion and other water operations information such that the volume forecasts can be more accurate and so some timing projections can be included to estimate an "operational hydrograph forecast". Dave and Roy also discussed the SNOTEL network in the basin and described NRCS's long-term goal of converting all snow courses to SNOTEL sites. There was much discussion on how to improve the accuracy of the forecast into Tongue River Reservoir, and it was decided that the Technical Group should ask the Commission to send a letter to Ed Burton, State Conservationist for Wyoming, requesting that three additional forecast points be added by Portland. The three stations are Big Goose near Sheridan, Little Goose near Big Horn, and Goose Creek near Acme. Keith and Roy will draft a letter for consideration by the group.

NWS

Keith Meier discussed that the National Weather Service has the responsibility for publishing flood warnings and has an alert network. The NWS has a River Forecast Center in Kansas City that covers the Missouri River basin. The NWS and the NRCS have joint forecast points and do coordinate such that the volume estimate at the forecast points should be the same from the two agencies. Keith pointed out that the El Nino effects are weakening and that could lead to more precipitation in the Yellowstone River basin.

State Agencies

Mike described the types of diversion and additional streamflow data that are collected by the Hydrographer-commissioners in Wyoming. The state began in 1975 to publish the data in the Hydrographer Reports. These are currently only available in hard copy, but the State Engineer's Office is working on getting a database in place such that these diversion, streamflow and reservoir-contents data will be archived and searchable and available on the SEO web page. Mike stated that the reservoirs in Wyoming generally fill under "normal" hydrologic conditions and the carryover amounts this winter are better than a year ago. The reservoirs have about 30 percent carryover this year. Jim asked Mike about the number of stock and other reservoirs in the basin. Wyoming agreed to send Montana a listing of the reservoirs in the Tongue River basin which fall under the Safety of Dams criteria. This list will be sent to Keith Kerbel, Jim and Roy.

General Discussion

Roy has been developing a table at the end of the water year to show how near the forecasts came to the runoff that was actually experienced at the forecast point. He agreed to share this information at the Commission meetings. Although, if the Commission continues to meet in early December, the USGS may not be completed with their streamflow reviews for that water year and the data may still be provisional. It was also discussed that a narrative water year re-cap should be included in the Commission's annual report. The Technical Work Group agreed that these discussions are very helpful and that we should plan to do this each spring. A tentative date of April 14, 2004 was selected and each participating agency will be asked to come prepared to get into more detail in their areas of expertise at the next meeting.

Art Hayes handed out copies of a Resolution being presented to the Montana Legislature that would request an interim study regarding Montana's share of water in the Yellowstone River tributaries. The Resolution was to be considered in committee the following week, but given the state of the budget in Montana, it was not known whether the resolution would receive the necessary support.

Recommendations to the Commission

Emphasize the importance of long-term streamflow data collection.

Send a letter to the NRCS requesting three additional forecast sites.

Invite the NRCS to come to the Commission meetings and present information on how the forecasts compared to actual runoff.

Include a Water Year summary in the Commission's annual report.

Continue to hold these agency Technical discussions in the spring to share information and get into more detail on the data collected in the river basins tributary to the Yellowstone River.

Sue Lowry

5/9/03

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GENERAL REPORT

Cost of operation and budget

The work funded by the Yellowstone River Compact 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 to the Commission 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 2003 was \$66,900, in accordance with the budget adopted for the year.

The estimated budgets for Federal fiscal years 2004, 2005, 2006, and 2007, based on an approximate 5-percent increase per year, were tentatively adopted subject to the availability of appropriations. The budgets for the four fiscal years are summarized as follows:

<u>October 1, 2003, to September 30, 2004 (fiscal year 2004):</u>	
Estimate for continuation of existing streamflow-gaging programs	\$70,000
<u>October 1, 2004, to September 30, 2005 (fiscal year 2005):</u>	
Estimate for continuation of existing streamflow-gaging programs	\$73,500
<u>October 1, 2005, to September 30, 2006 (fiscal year 2006):</u>	
Estimate for continuation of existing streamflow-gaging programs	\$77,200
<u>October 1, 2006, to September 30, 2007 (fiscal year 2007):</u>	
Estimate for continuation of existing streamflow-gaging programs	\$81,100

Streamflow-gaging station operation

Streamflow-gaging stations at the measuring sites specified in the Yellowstone River Compact were continued in operation, and satisfactory records were collected at each station. Locations of streamflow-gaging stations, along with reservoir content stations, are shown on a map of the Yellowstone River Basin at the end of this report.

For measurement sites, horizontal coordinate information (latitude and longitude) is referenced to the North American Datum of 1927 (NAD 27). The gage datums and elevations listed in this report are referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).

During water year 2003, annual streamflow was below normal¹ at all reporting Yellowstone River Compact gaging stations, except Clarks Fork Yellowstone River at Edgar, which was in the normal range.

<u>Station number</u>	<u>Streamflow-gaging station</u>	<u>Percent of average streamflow²</u>
06208500	Clarks Fork Yellowstone River at Edgar, Mont., minus diversions to White Horse Canal	93
06294500	Bighorn River above Tullock Creek, near Bighorn, Mont., minus Little Bighorn River near Hardin, Mont. Adjusted for change in contents in Bighorn Lake	43
06308500	Tongue River at Miles City, Mont.	65
06326500	Powder River near Locate, Mont.	48

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

²Average is based on period of record at station.

Tabulation of water-discharge records for water year 2003 and graphical comparisons of discharge during water year 2003 with discharge during water year 2002 and with 10-year and 30-year average discharges are provided in the section "Summary of discharge for Yellowstone River Compact streamflow-gaging stations."

Diversions

No diversions were regulated by the Commission during water year 2003.

Reservoir contents

Reservoirs completed after January 1, 1950

Bighorn Lake, a Bureau of Reclamation storage project on the Bighorn River that is the largest in the basin, contained 619,000 acre-feet at the beginning of the water year and 769,900 acre-feet at the end of the water year. Daily contents ranged from 591,400 acre-feet on March 11, 2003 to 827,900 acre-feet on July 7, 2003. Boysen Reservoir, located on the Wind River and operated by the Bureau of Reclamation, began the water year with 198,900 acre-feet in storage and ended the water year with 311,900 acre-feet. Anchor Reservoir began the water year with 254 acre-feet in storage and ended the water year with 349 acre-feet. Month-end and year-end contents and a description of these reservoirs are given in the section "Monthly summary of contents for Yellowstone River 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.

Reservoirs existing on January 1, 1950

As a matter of record and general information, month-end contents data are given later in the report for four reservoirs in existence upstream from the points of measurement on January 1, 1950. The reservoirs are Bull Lake, Pilot Butte Reservoir, Buffalo Bill Reservoir, and Tongue River Reservoir. These data are pertinent to allocation under Article V, Section C, Item 3 of the Compact.

The storage capacity of Buffalo Bill Reservoir was increased in 1992 from 456,600 acre-feet to 644,540 acre-feet (listed as 646,565 acre-feet by Bureau of Reclamation). The storage capacity of Tongue River Reservoir was increased in 1999 from 68,000 acre-feet to 79,100 acre-feet.

06208500 CLARKS FORK YELLOWSTONE RIVER AT EDGAR, MONT.
 (Minus diversions to White Horse Canal)

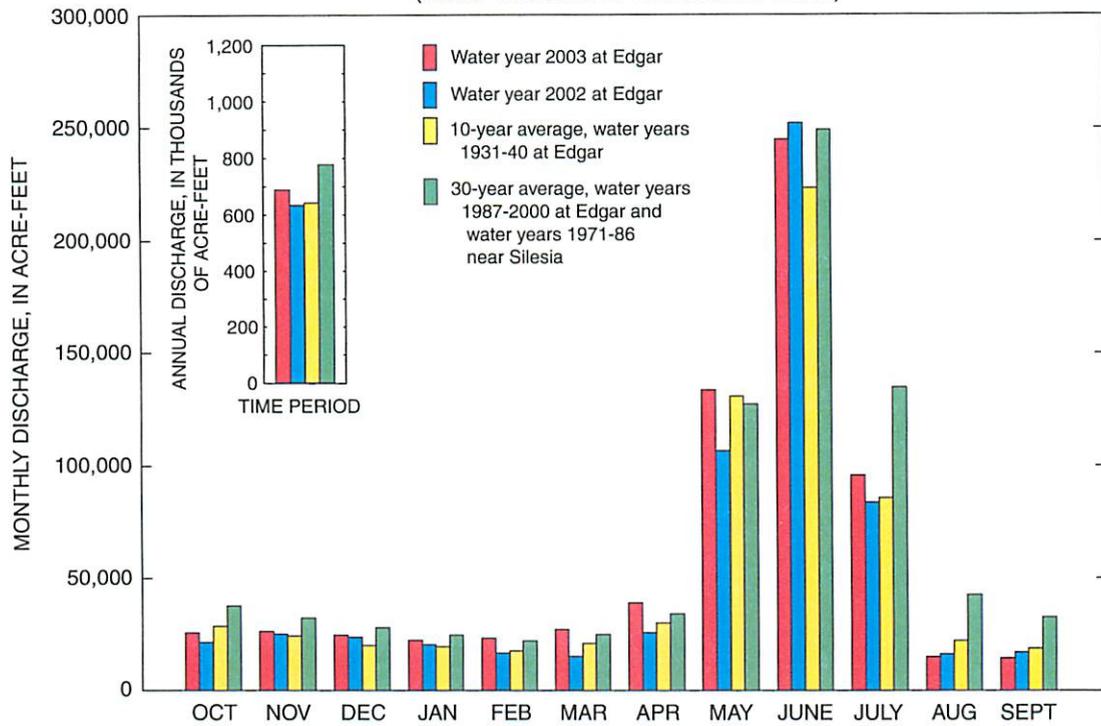


Figure 1. Comparison of discharge of the Clarks Fork Yellowstone River during water year 2003 with discharge during water year 2002 and with 10-year and 30-year average discharges.

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

SUMMARY STATISTICS	WATER YEARS 1946-1961*		WATER YEARS 1967 - 2003**	
ANNUAL TOTAL	3358			
ANNUAL MEAN	5501	1947	3805	
HIGHEST ANNUAL MEAN	1623	1961	5594	1997
LOWEST ANNUAL MEAN	25700	Jun 23 1947	1474	2003
HIGHEST DAILY MEAN	462	May 12 1961	50000	May 20 1978
LOWEST DAILY MEAN	528	May 6 1961	400	Apr 4 1967
ANNUAL SEVEN-DAY MINIMUM	d26200	Jun 24 1947	843	Nov 18 1977
MAXIMUM PEAK FLOW	10.65	May 20 1947	b59200	May 20 1978
MAXIMUM PEAK STAGE	c275	Nov 15 1959	14.15	May 20 1978
INSTANTANEOUS LOW FLOW	2578000			
ANNUAL RUNOFF (AC-FT)	6200		2757000	
10 PERCENT EXCEEDS	2810		6210	
50 PERCENT EXCEEDS	1500		3380	
90 PERCENT EXCEEDS			1810	

*--Prior to construction of Yellowtail Dam.

**--After completion of Yellowtail Dam.

a--Backwater from ice.

b--Gage height, 14.50 ft, at different site and elevation.

c--About, result of freezeup.

d--Gage height, 8.79 ft, at different site and elevation.

e--Estimated.

06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MONT.

(Minus

06294000 Little Bighorn River near Hardin, Mont.;
adjusted for change in contents in Bighorn Lake)

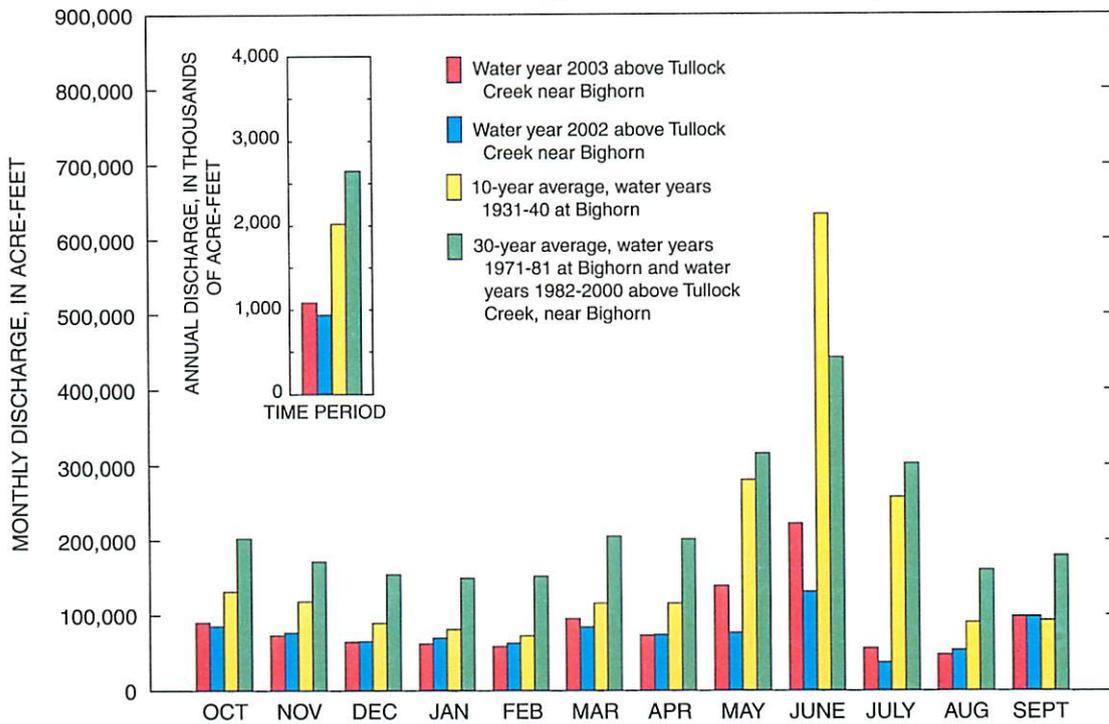


Figure 2. Comparison of discharge of the Bighorn River during water year 2003 with discharge during water year 2002 and with 10-year and 30-year average discharges.

06308500 Tongue River at Miles City, Mont.

LOCATION.--Lat 46°23'05", long 105°50'41" (NAD 27), in SE¹/₄SE¹/₄SE¹/₄ sec. 4, T.7 N., R.47 E., Custer County, Hydrologic Unit 10090102, on right bank 1.5 mi south of Miles City and at river mile 2.3.

DRAINAGE AREA.--5,397 mi². Area at site used prior to Oct. 4, 1995, 5,379 mi².

WATER-DISCHARGE RECORDS

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. April 1946 to Oct. 4, 1995, at site 2.5 mi upstream from present site. Flows at present site are equivalent with flows/discharge at site operated from 1946. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,360 ft (NGVD 29). April 1938 to April 1942, nonrecording gage at site 8 mi upstream from present site at different elevation. April 1946 to Sept. 30, 1963, at elevation 1.00 ft higher than present site. Oct. 4, 1995, gage was moved 2.5 miles downstream.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulation by Tongue River Reservoir (station 0630700) with capacity of 79,100 acre-feet, and many small reservoirs in Wyoming with 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	93	e90	e100	e80	e70	184	182	702	721	98	146
2	48	95	e110	e100	e80	e70	179	207	900	677	91	160
3	52	102	e110	e100	e80	e70	177	250	957	632	98	161
4	54	108	e110	e100	e80	e70	174	270	1440	589	116	155
5	58	121	e100	e100	e70	e70	171	349	1870	574	99	151
6	58	138	e100	e100	e70	e70	168	415	1750	521	83	152
7	60	182	e100	e100	e70	e60	165	406	1620	453	72	149
8	64	162	e100	e100	e70	e60	164	402	1540	393	100	162
9	63	145	e100	e90	e70	e60	163	410	1430	376	80	171
10	61	130	e100	e90	e70	e65	159	450	1390	312	80	152
11	63	115	e100	e90	e70	e70	157	520	1390	246	88	139
12	70	112	e100	e80	e75	e70	154	470	1310	207	92	120
13	105	111	e100	e80	e80	e250	153	369	1200	203	80	116
14	115	109	e100	e80	e80	e1500	150	281	1100	216	84	117
15	118	108	e100	e80	e80	e4000	151	299	1140	165	79	120
16	117	107	e100	e80	e80	3120	168	337	1190	138	87	124
17	111	107	e100	e70	e80	1680	231	335	1160	152	104	126
18	108	107	e100	e70	e80	1210	159	349	1100	154	105	126
19	108	106	e100	e70	e80	906	151	362	1060	153	109	125
20	109	108	e90	e80	e80	792	150	366	1000	141	111	142
21	109	109	e90	e80	e70	694	148	363	931	135	75	127
22	109	109	e80	e80	e70	648	144	396	861	111	80	131
23	109	108	e80	e80	e70	683	144	418	857	114	83	117
24	110	100	e80	e80	e70	509	144	382	834	127	82	112
25	111	96	e90	e80	e70	356	144	389	860	119	102	127
26	112	91	e90	e80	e70	271	150	388	823	117	105	122
27	113	e70	e90	e80	e70	239	167	386	760	119	100	122
28	115	e70	e90	e80	e70	220	175	364	704	139	93	100
29	116	e80	e90	e80	---	206	187	384	759	136	116	89
30	103	e80	e90	e80	---	196	186	376	731	102	117	83
31	111	---	e90	e80	---	192	---	515	---	101	131	---
TOTAL	2795	3279	2970	2640	2085	18477	4917	11390	33369	8343	2940	3944
MEAN	90.2	109	95.8	85.2	74.5	596	164	367	1112	269	94.8	131
MAX	118	182	110	100	80	4000	231	520	1870	721	131	171
MIN	35	70	80	70	70	60	144	182	702	101	72	83
AC-FT	5540	6500	5890	5240	4140	36650	9750	22590	66190	16550	5830	7820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)*

	244	254	190	195	278	533	437	687	1263	463	181	199
MEAN	244	254	190	195	278	533	437	687	1263	463	181	199
MAX	694	585	423	529	1794	1783	1693	2983	3825	2207	700	599
(WY)	1972	1942	1950	1999	1971	1971	1965	1978	1978	1975	1975	1968
MIN	10.3	60.9	68.0	76.9	73.8	74.5	12.5	29.2	41.9	12.6	6.08	2.40
(WY)	1961	1989	1990	2002	2003	2002	1961	1961	2002	1960	1949	1938

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1938 - 2003*

ANNUAL TOTAL	25508.5											
ANNUAL MEAN	69.9											
HIGHEST ANNUAL MEAN									407			
LOWEST ANNUAL MEAN									986			1978
HIGHEST DAILY MEAN	262	Jun 25				4000	Mar 15	9290	57.2			1961
LOWEST DAILY MEAN	7.3	Jul 16				35	Oct 1	0.00	0.00			Jul 9 1940
ANNUAL SEVEN-DAY MINIMUM	10	Jul 21				52	Oct 1	0.00	0.00			Jul 9 1940
MAXIMUM PEAK FLOW						a4000	Mar 15	c13300				Jun 15 1962
MAXIMUM PEAK STAGE						b10.00	Mar 15	c13.27				Mar 19 1960
ANNUAL RUNOFF (AC-FT)	50600					192600		294900				
10 PERCENT EXCEEDS	113					711		911				
50 PERCENT EXCEEDS	75					112		222				
90 PERCENT EXCEEDS	14					70		69				

*--During period of record (April 1938 to April 1942, April 1946 to current year).

a--Estimated discharge during period or ice effect.

b--Backwater from ice.

c--At previous site and elevation.

e--Estimated.

06308500 TONGUE RIVER AT MILES CITY, MONT.

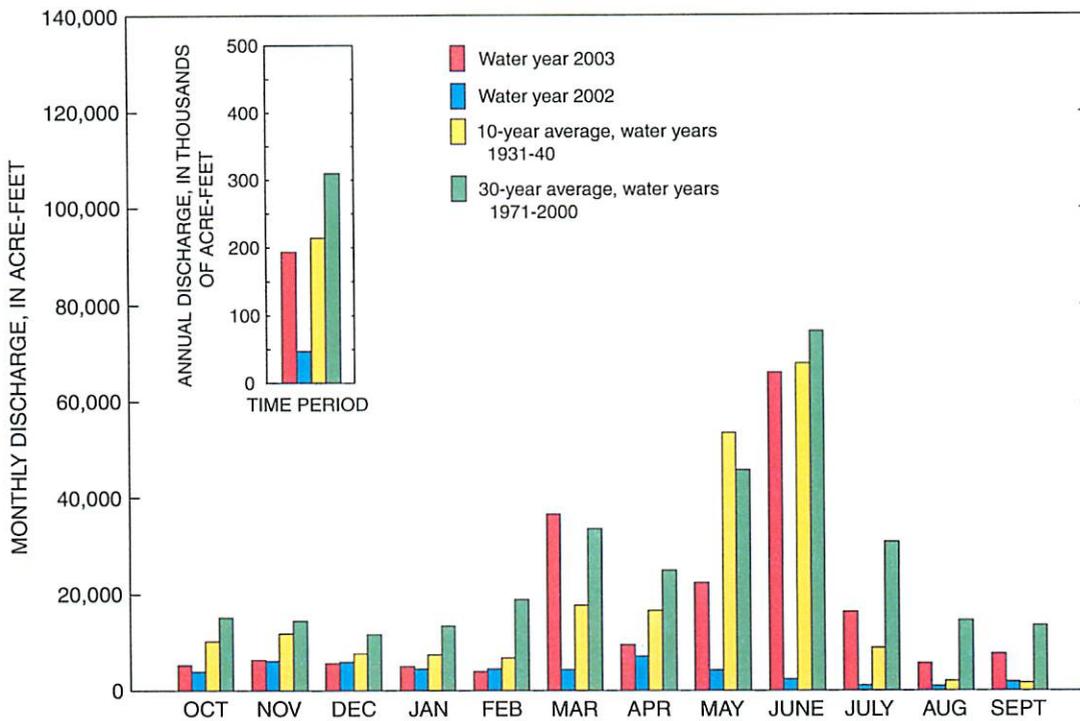


Figure 3. Comparison of discharge of the Tongue River during water year 2003 with discharge during water year 2002 and with 10-year and 30-year average discharges.

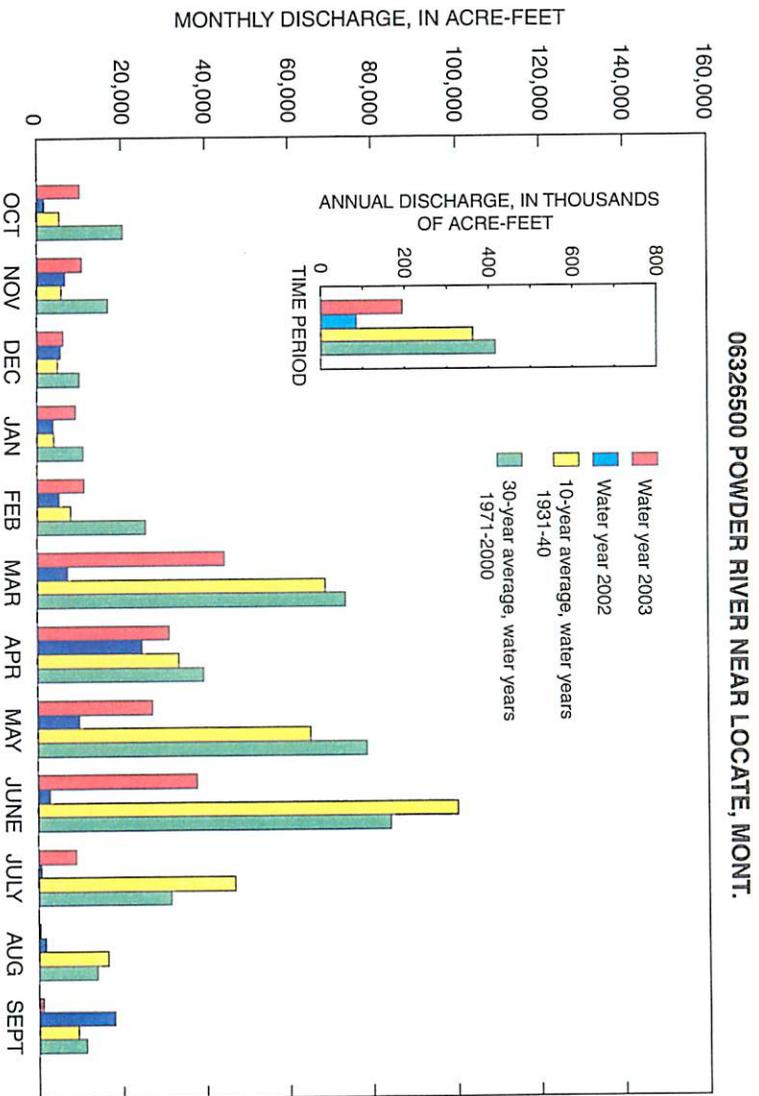


Figure 4. Comparison of discharge of the Powder River during water year 2003 with discharge during water year 2002 and with 10-year and 30-year average discharges.

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

06258900 Boysen Reservoir, Wyo.

LOCATION.--Lat 43°25'00", long 108°10'37" (NAD 27), in NW¹/₄NW¹/₄ 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 mi².

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

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by rock-fill dam completed in October 1951. Storage began Oct. 11, 1951. Usable capacity, 701,500 acre-ft between elevation 4,657.00 ft, invert of penstock pipe, and 4,725.00 ft, top of spillway gate. Dead storage, 40,080 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. Between January 1966 and October 1996, usable capacity was 742,100 acre-ft and dead storage was 59,880 acre-ft, at same elevations. Crest of dam is at elevation 4,758.00 ft. Water used for irrigation, flood control, and power generation.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 862,500 acre-ft, July 6, 7, 1967, elevation, 4,730.83 ft; minimum daily contents 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 daily contents, 381,300 acre-ft, July 5, elevation, 4,704.52 ft; minimum daily contents, 199,300 acre-ft, Oct. 1, elevation, 4,687.27 ft.

Month	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 2002	4,687.23	198,900	---
October 31	4,688.89	214,100	+15,200
November 30	4,690.11	225,600	+11,500
December 31	4,691.46	238,600	+13,000
January 31, 2003	4,693.09	254,700	+16,100
February 28	4,694.45	268,500	+13,800
March 31	4,697.97	305,700	+37,200
April 30	4,698.70	313,700	+8,000
May 31	4,700.48	333,600	+19,900
June 30	4,704.11	376,300	+42,700
July 31	4,701.74	348,100	-28,200
August 31	4,698.50	311,500	-36,600
September 30, 2003	4,698.53	311,900	+400
2003 water year			+113,000

06260300 Anchor Reservoir, Wyo.

LOCATION.--Lat 43°39'50", long 108°49'27" (NAD 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 mi².

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

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (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, including 68 acre-ft below elevation 6,343.75 ft. Prior to Oct. 1, 1971, usable capacity was 17,280 acre-ft, including 149 acre-ft below the invert. Water is used for irrigation of land in Owl Creek basin.

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

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

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 1,600 acre-ft, June 1, elevation, 6,378.68 ft; minimum daily contents, 247 acre-ft, Oct. 31-Nov. 1, elevation, 6,354.70 ft.

Month	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 2002	6,355.00	254	---
October 31	6,354.70	247	-7
November 30	6,355.10	256	+9
December 31	6,355.00	254	-2
January 31, 2003	6,355.00	254	0
February 28	6,355.00	254	0
March 31	6,355.50	268	+14
April 30	6,358.10	348	+80
May 31	6,377.54	1,500	+1,152
June 30	6,363.38	552	-948
July 31	6,358.11	349	-203
August 31	6,358.15	350	+1
September 30, 2003	6,358.11	349	-1
2003 water year			+95

06286400 Bighorn Lake near St. Xavier, Mont.

LOCATION.--Lat 45°18'27", long 107°57'26" (NAD 27), in SW¹/₄SE¹/₄ sec.18, T.6 S., R.30 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 southwest of St. Xavier, and at river mile 86.6.

DRAINAGE AREA.--19,626 mi².

PERIOD OF RECORD.--November 1965 to current year (month-end contents only). Prior to October 1969, published as "Yellowtail Reservoir." Records of daily elevations and contents on file at the USGS office in Helena, Mont.

GAGE.--Water-stage recorder in powerhouse control room. Datum of gage is 3,296.5 feet (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed from thin concrete-arch dam; construction began in 1961; completed in 1967. Storage began Nov. 3, 1965. Usable capacity, 1,312,000 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. Water is used for power production, flood control, irrigation, and recreation.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,346,000 acre-ft, July 6, 1967, elevation, 3,656.43 ft; minimum contents since first filling, 591,400 acre-ft, Mar. 11, 2003, elevation, 3,572.81 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 827,900 acre-ft, July 7, elevation, 3,616.02 ft; minimum contents, 591,400 acre-ft, Mar. 11, elevation, 3,572.81 ft.

Month	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 2002	3,578.61	619,000	---
October 31	3,584.32	646,900	+27,900
November 30	3,585.46	652,600	+5,700
December 31	3,582.01	635,600	-17,000
January 31, 2003	3,578.07	616,400	-19,200
February 28	3,573.68	595,500	-20,900
March 31	3,576.93	610,900	+15,400
April 30	3,576.34	608,100	-2,800
May 31	3,589.92	675,100	+67,000
June 30	3,614.31	815,800	+140,700
July 31	3,609.48	783,900	-31,900
August 31	3,603.21	746,600	-37,300
September 30, 2003	3,607.20	769,900	+23,300
2003 water year			+150,900

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

The extent, if any, to which the use of reservoirs in this section may be subject to Compact allocations was not determined. As a matter of hydrologic interest, the month-end usable 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 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 water-level data and the reservoir-capacity table.

Month	Usable contents, in acre-feet			
	06224500 Bull Lake	Pilot Butte Reservoir	06281500 Buffalo Bill Reservoir	06307000 Tongue River Reservoir
September 30, 2002.....	40,180	3,000	358,900	26,080
October 31	42,450	15,630	350,700	28,250
November 30	43,260	25,190	357,100	30,650
December 31	43,300	25,060	361,900	30,710
January 31, 2003	43,140	24,980	368,400	32,170
February 28	43,410	25,010	373,300	35,050
March 31	43,830	24,960	384,100	47,150
April 30	39,860	23,890	399,600	55,050
May 31	50,020	17,350	503,000	78,360
June 30	95,750	27,800	619,600	79,500
July 31	103,500	14,910	614,200	63,300
August 31	64,870	12,800	530,500	43,760
September 30, 2003.....	55,620	9,290	465,700	39,050
Change in contents during water year.....	+15,440	+6,290	+106,800	+12,970

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 appropriate rights existing in the States of Wyoming and Montana on January 1, 1950 are supplied, and after appropriate 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.

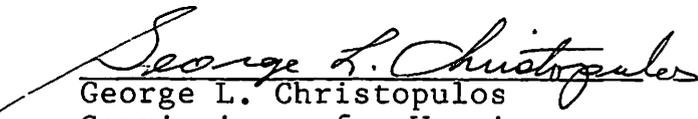
No action of the Commission shall be effective until approval by the Commissioners for the States of Wyoming and Montana.

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. Christopoulos
Commissioner for Wyoming

ATTESTED:



L. Grady Moore
Federal Representative

Adopted November 17, 1953
Amended December 16, 1986

**RULES FOR THE RESOLUTION OF DISPUTES
OVER THE ADMINISTRATION OF THE
YELLOWSTONE RIVER COMPACT**

December 19, 1995

Section I. General Framework

According to Article III(F) of the Yellowstone River Compact.

"In case of the failure of the representatives of Wyoming and Montana to unanimously agree on any matter necessary to the proper administration of this compact, then the member selected by the director of the United States Geological Survey shall have the right to vote upon the matters in disagreement and such points of disagreement shall then be decided by a majority vote of the representatives of the states of Wyoming and Montana and said member selected by the director of the United States geological survey, each being entitled to one vote."

Section II. Purpose and Goal

- A. The purpose of these rules is to clarify and more fully develop the dispute resolution process outlined in Section I.
- B. The goal of the dispute resolution process outlined in these rules is to encourage joint problem solving and consensus building. It consists of three phases -- unassisted negotiation, facilitation, and voting.
- C. Any agreement reached through this process is binding on Montana, Wyoming, and the United States Geological Survey (USGS).
- D. Either state can initiate the dispute resolution process defined in Sections IV, V, and VI, and the other state is obligated to participate in good faith. The states agree that the issues pursued under this dispute resolution process shall be both substantive and require timely resolution.

Section III. Consensus

- A. In the process of administering the Yellowstone River Compact, the representatives from Montana and Wyoming agree to seek consensus.
- B. For purposes of this rule, consensus is defined as an agreement that is reached by identifying the interests of Montana and Wyoming and then building an integrative solution that maximizes the satisfaction of as many of the interests as possible. The process of seeking consensus does not involve voting, but a synthesis and blending of alternative solutions.

Section IV. Unassisted Negotiation

- A. In all situations, the representatives from Montana and Wyoming shall first attempt to seek consensus through unassisted negotiation. The federal representative will not serve as chairperson in the unassisted negotiation process.
- B. During a negotiation process, the representatives from Montana and Wyoming shall identify issues about which they differ, educate each other about their needs and interests, generate possible resolution options, and collaboratively seek a mutually acceptable solution.
- C. To help facilitate negotiations, the representatives from Montana and Wyoming in cooperation with the USGS agree to share technical information and develop joint data bases. Other data sources may also be used.
- D. The USGS shall serve as technical advisor in the two-state negotiations.

Section V. Facilitation

- A. If the representatives from Montana and Wyoming are not able to reach consensus through unassisted negotiation, they shall each identify, articulate, and exchange, in writing, the unresolved issues.
- B. The representatives from Montana and Wyoming shall then jointly appoint a facilitator to assist in resolving the outstanding dispute. If the representatives from Montana and Wyoming cannot identify a mutually acceptable facilitator, the representative appointed by the USGS shall appoint a facilitator.
- C. A facilitator, for purposes of this rule, is defined as a neutral third party that shall help the representatives from Montana and Wyoming communicate, negotiate, and reach agreements voluntarily. The facilitator is not empowered to vote or render a decision.
- D. The facilitator shall assist the representatives from Montana and Wyoming in developing appropriate ground rules for each facilitated session including establishing a deadline for completion of the facilitation process, setting an appropriate agenda, identifying issues, collecting and analyzing technical information, developing options, packaging agreements, and preparing a written agreement. The facilitator reserves the right to meet privately with each representative during the facilitation process.

Section VI. Voting

- A. If, and only if, the representatives from Montana and Wyoming are unable to reach consensus with the assistance of a facilitator, then a dispute may be settled by voting.
- B. The representatives from Montana and Wyoming, along with the representative appointed by the director of the USGS, are each entitled to one vote.
- C. If the USGS representative does not vote in accordance with Article III, then the director of the USGS will select, with concurrence from Wyoming and Montana, a neutral third party to vote.

D. If the representative appointed by the director of the USGS is not involved in the steps outlined in Sections IV and V, each state shall have the opportunity to present appropriate information to that representative. This information may be presented through both oral presentations and written documents. All information will be shared with the other state.

The representative of the USGS may also consult the facilitator referenced in Section V in an attempt to resolve any disputes.

- E. The USGS shall pay the expenses of the representative appointed by the director of the USGS.
- F. Points of disagreement shall be resolved by a majority vote.

Section VII. Funding

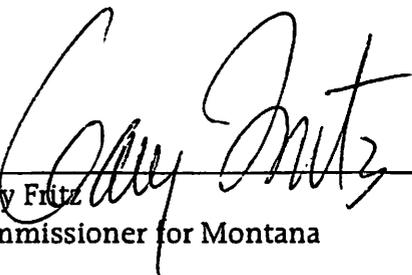
A. The USGS will pay one-half and the states of Montana and Wyoming shall each pay one-quarter of the expenses of the facilitator, which shall not exceed \$10,000, unless agreed to by both states and the USGS.

Section VIII. Amendments

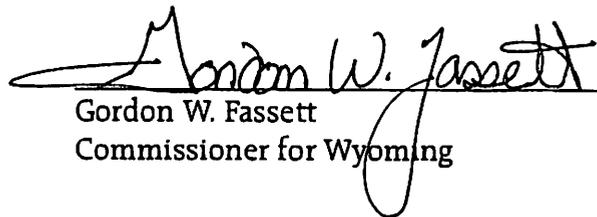
A. These rules may be amended or revised by a unanimous vote of the Commission.

Section IX. Execution

These rules for the resolution of disputes over the administration of the Yellowstone River Compact are hereby executed on the date indicated below.



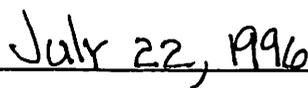
Gary Fritz
Commissioner for Montana



Gordon W. Fassett
Commissioner for Wyoming



William F. Horak
Federal Representative



Date

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) 777-354

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 $\frac{1}{4}$ $\frac{1}{4}$, Section _____, T. _____ R. _____

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

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: _____

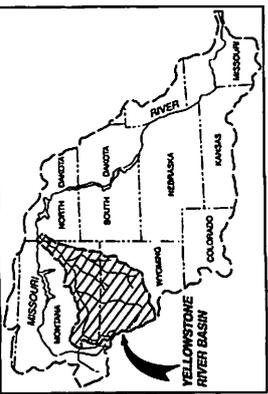
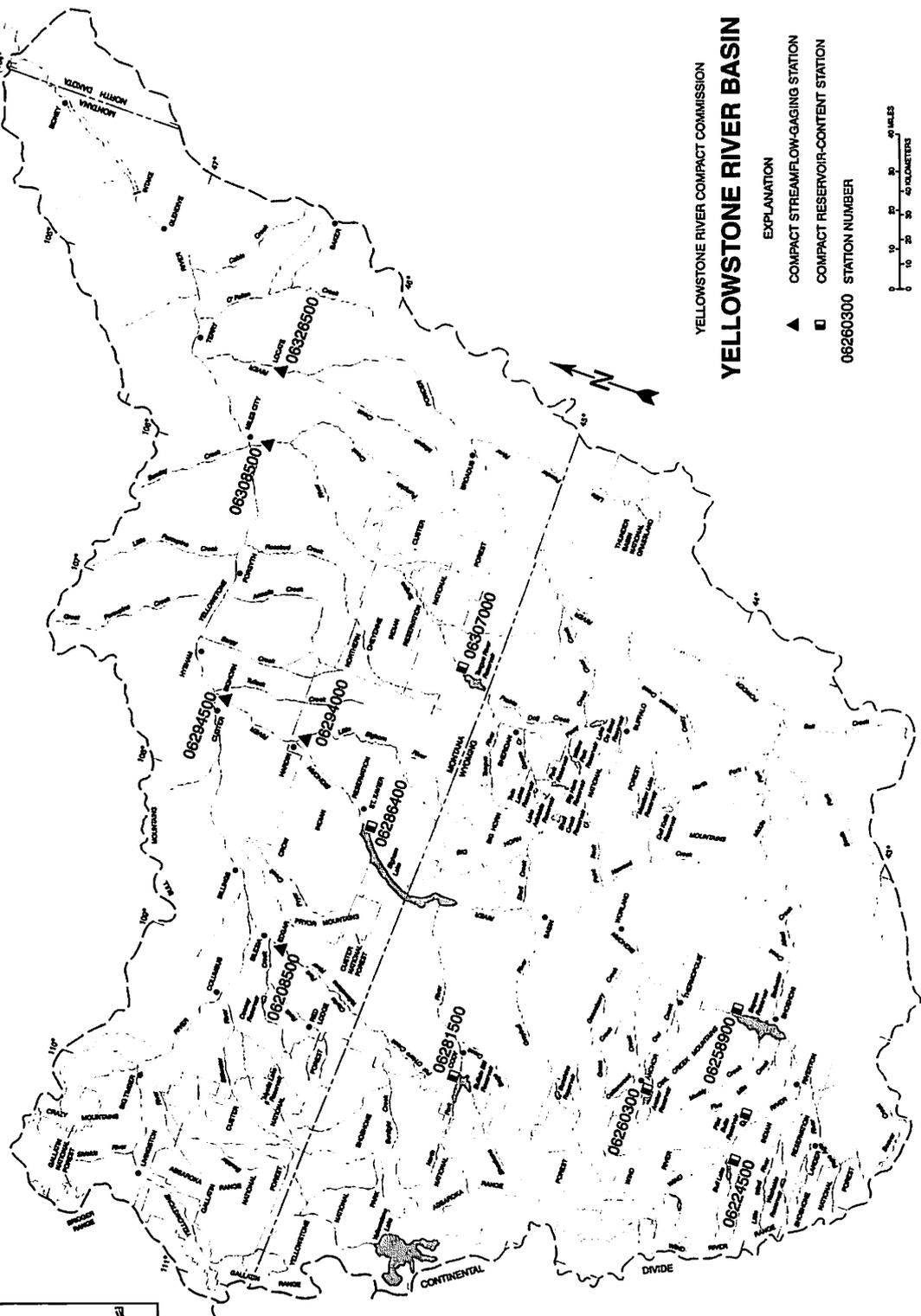
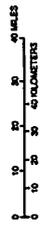
CONVERSION TABLE

<u>Multiply inch-pound units</u>	<u>By</u>	<u>To obtain SI units</u>
<i>Length</i>		
feet (ft)	0.3048	meters (m)
miles (mi)	1.609	kilometers (km)
<i>Area</i>		
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)
<i>Volume</i>		
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)
<i>Flow</i>		
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.

YELLOWSTONE RIVER COMPACT COMMISSION
YELLOWSTONE RIVER BASIN

- EXPLANATION
- ▲ COMPACT STREAMFLOW-GAGING STATION
 - ▣ COMPACT RESERVOIR-CONTENT STATION
- 06260300 STATION NUMBER



MAP SHOWING LOCATIONS OF YELLOWSTONE RIVER COMPACT STREAMFLOW-GAGING AND RESERVOIR-CONTENT STATIONS