UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SEDIMENT DISCHARGE AND CHANNEL CHANGE IN THE NORTH FORK TETON RIVER, 1977-78, FREMONT AND MADISON COUNTIES, IDAHO

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Open-File Report 79-1335

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CONVERSION FACTORS

The following conversion table is included for the convenience of those who prefer to use International System (SI) units rather than inch-pound system units. Sediment data for concentrations are given in milligrams per liter (mg/L), which are (within the range of values presented) numerically equal to parts per million.

Multiply Inch-Pound Unit	By	To Obtain SI Unit
Length		
inch (in)	25.40	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
Area		
acre	4047	square meter (m^2)
square mile (mi^2)	2.590	square kilometer (km^2)
Volume		
cubic foot (ft^3)	0.02832	cubic meter (m^3)
ton (short)	0.9072	metric ton
ton per day (ton/d)	0.9072	metric ton
pound per cubic foot (lb/ft^3)	16.01	kilogram per cubic meter (kg/m^3)
acre-foot (acre-ft)	1233	cubic meter (m^3)
Flow		
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)

Temperature-Conversion Table

Conversion of degrees Celsius (°C) to degrees Fahrenheit (°F) is based on the equation, °F = (1.8)(°C) + 32. Temperatures in °F are rounded to the nearest degree. Underscored temperatures are exact equivalents.

°C	°F	°C	°F	°C	°F
0	32	7	46	14	57
-17.8	34	8	47	15	59
2	36	9	48	16	61
3	37	10	50	17	63
4	39	11	52	18	64
5	41	12	54	19	66
6	43	13	55	20	68

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ABSTRACT

The Teton Dam failure and resultant flood of June 5, 1976, severely disrupted the geomorphic character of the North Fork Teton River. Extensive channel-restoration measures were required to contain expected normal spring flows.

Six principal sites were established on the 17-mile reach of the North Fork Teton River to study sediment transport and channel change during 1977-78. Despite continued levee construction during 1977, initial sediment rates and channel changes were less than expected--presumably because of drought conditions. During April 1 to September 30, 1977, total water discharge at the Teton Island bridge (site NF-A) was 97,530 acre-feet, and the total sediment discharge was 4,360 tons. Total water discharge for April 1 to September 30, 1978, was 191,940 acre-feet, and 10,680 tons of sediment were transported. Water discharge during the 1978 water year was estimated at 150 percent of the 50-year average flow.

Analyses of data for the sites indicated several trends of erosion and deposition within the North Fork. Minimal channel change in the upper 7 miles of the river between Teton Island bridge (site NF-A) and site NF-D indicated equilibrium may temporarily exist between hydraulic-flow properties and channel shape. Surveyed changes (1977-78) in channel volumes, converted to tons of sediment, ranged from 180 tons eroded to 430 tons deposited. Streambed profiles (before and after Teton Dam failure) indicated little change in streambed elevations between Teton Island bridge (site NF-A) and site NF-B.

Erosional tonnage (surveyed data) at subreach NF-E was 4,260 tons. One-half mile downstream at site NF-F, an increase of 4,150 tons of suspended and 1,050 tons of bedload sediment was probably partly derived from bank erosion at subreach NF-E. An estimated 5,870 tons (surveyed data) was deposited within subreach NF-F. Virtually the entire bedload was redeposited before site NF-G, 4.4 miles downstream, where measured bedload was 91 tons. Suspended-sediment discharge transported past site G was 16,470 tons.

Lateral erosion and deposition in the lower 10 miles of the North Fork indicate that subreaches now shortened by manmade channel alinements may begin to meander. Future deposition of coarse material at upstream gravel and concrete impoundments may trigger instability in the entire North Fork Teton River.

INTRODUCTION

Failure of Teton Dam (June 5, 1976) in eastern Idaho resulted in a flood surge of 2.3 million ft^3/s that severely disrupted the geomorphic character of the downstream Teton River system (fig. 1). During 1976, channel-restoration measures, such as dredging, levee construction, meander removal, and placing of riprap, were required on the North Fork Teton River to contain expected normal spring flows. Levee construction continued into late spring 1977. Local, State, and Federal agencies were concerned that potential flood threats and transport of upstream dam-break related sediment deposits could adversely affect operation and maintenance of reestablished diversions, bridges, culverts, and fish and wildlife habitats.

Because of these concerns, the U.S. Department of Agriculture, SCS (Soil Conservation Service), and Fish and Wildlife Service requested the U.S. Geological Survey to study sediment transport and channel readjustments in the North Fork Teton River during 1977-78. The study was funded directly by SCS. All field surveys, laboratory analyses, and data compilation were done by Geological Survey personnel.

This report summarizes data collected during the drought of 1977 and the spring-summer runoff of 1978. Because this is primarily a hydrologic-data report, only minimal interpretation of the data is provided.

Previous Investigations

Several investigations of hydrology and geomorphology in Fremont and Madison Counties have been made since the Teton Dam failure. Scott (1977) prepared a map of geomorphic effects (erosion and sedimentation) caused by the flood from the canyon-dam area to the Sugar City-Rexburg area. Special flood-hazard reports were prepared for Madison and Fremont Counties by the U.S. Department of the Army, Corps of Engineers (1976 and 1977). Ray and Kjelstrom (1978) discussed various hydrologic aspects of the flood

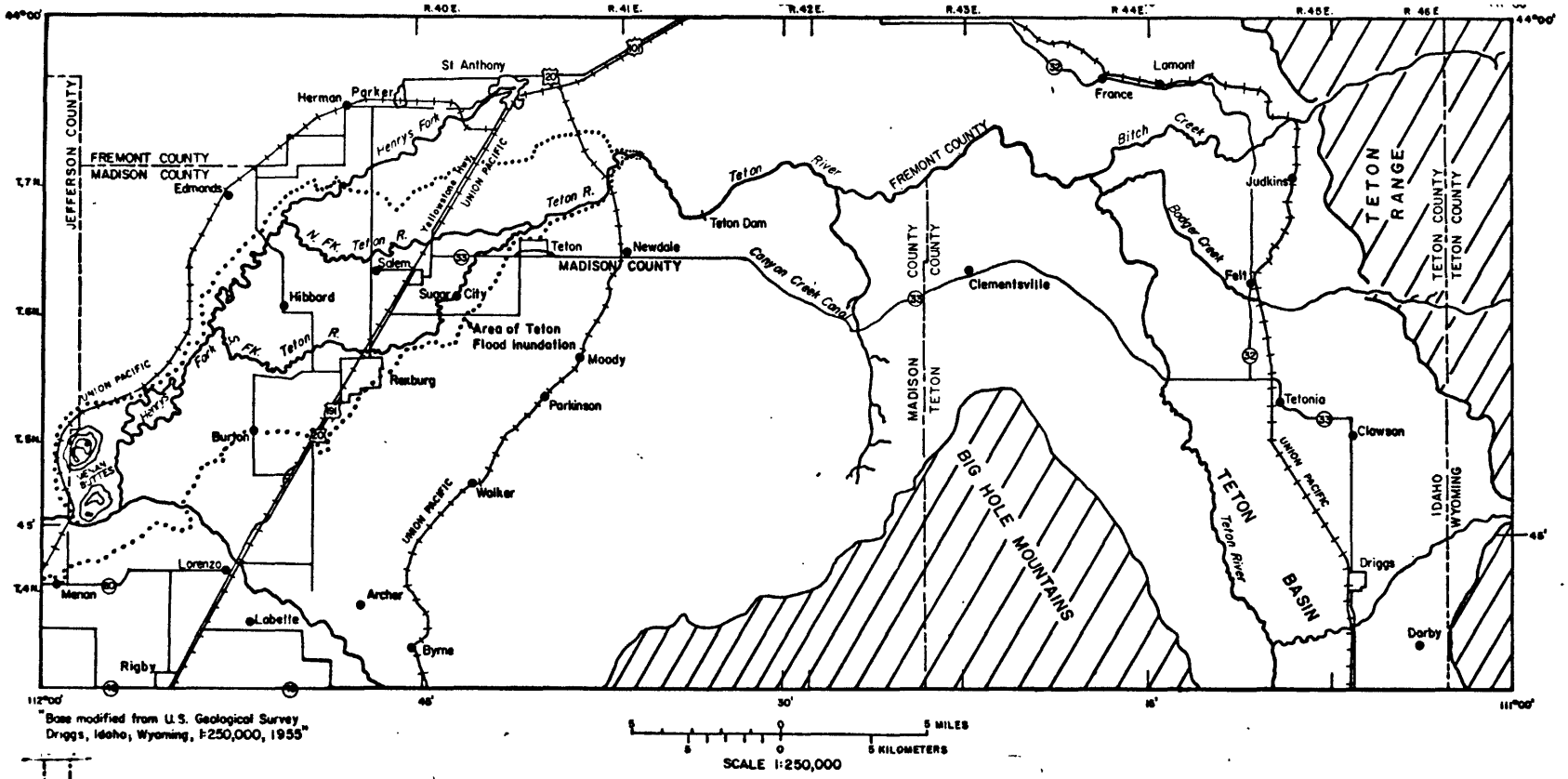


Figure 1. Index maps of Idaho showing location of Teton River area.

from the Teton Dam failure. Flood-inundated areas and maximum water-surface elevations were presented in a series of Hydrologic Investigations Atlases (Ray and others, 1976, and Thomas and others, 1976). Haskett and others (1977) assessed land and ground-water usage in the area.

U.S. Geological Survey Gaging-Station-Numbering System

Each gaging station and partial-record station has been assigned a number in downstream order in accordance with the permanent numbering system used by the Geological Survey. Numbers are assigned in a downstream direction along the main stream, and stations on tributaries between main-stream stations are numbered in the order that the tributaries enter the main stream. A similar order is followed on other ranks of tributaries. The complete 8-digit number, such as 13055000, which is used for the station Teton River near St. Anthony, includes the part number "13," indicating that Teton River is in the Snake River basin.

DESCRIPTION OF AREA

Location and General Features

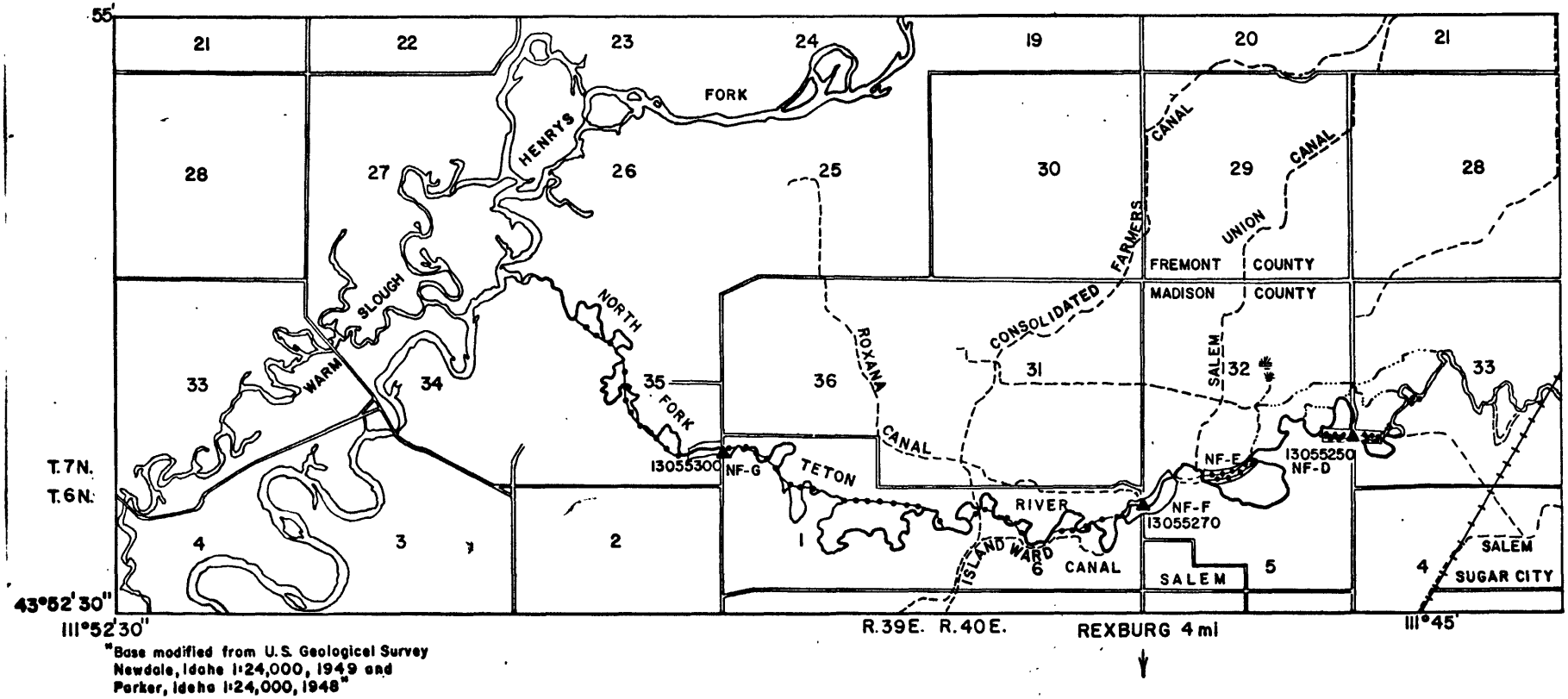
The Teton River drains the rugged western slope of the Teton Range and the northeastern slope of the Big Hole Mountains, located along the Idaho-Wyoming border (fig. 1). Basin altitudes range from 3,800 to 13,000 ft, averaging 7,180 ft. Downstream from Teton Dam, the Teton River meanders through the upper Teton Valley near Driggs, until it is constrained in an incised canyon near the eastern margin of the Snake River Plain--a broad tectonic depression underlain by rhyolitic and basaltic rock formations.

The river meanders for several miles downstream from the canyon mouth, through a low basaltic scarp to an alluvial-fill flat, where a series of pools have formed in extensive gravel deposits (dam-break related).

Four miles downstream from the canyon mouth, the main stem of Teton River splits into the North and South Forks (fig. 1), which carry about 40 and 60 percent, respectively, of the Teton River flow.

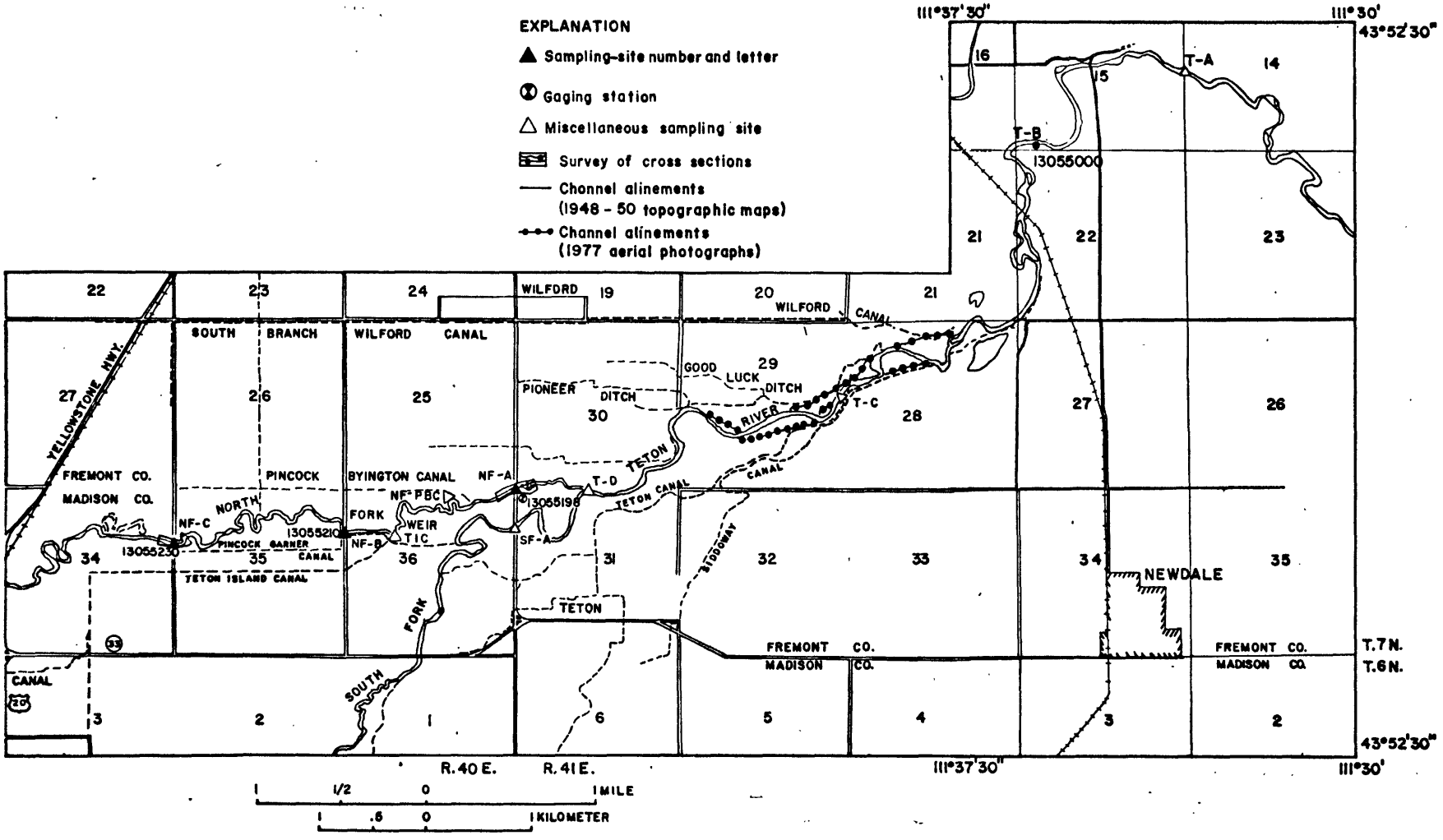
Land Use

Land use along the North and South Forks Teton River is extensively agricultural. Numerous diversion canals (fig. 2) from the Teton River and North and South Forks supply an estimated 80 percent of the water required for irrigation of



"Base modified from U.S. Geological Survey Newdale, Idaho 1:24,000, 1949 and Parker, Idaho 1:24,000, 1948"

Figure 2. Locations of



data-collection sites.

alfalfa, hay, pasture, potatoes, and various grains. The other 20 percent is supplied by ground-water pumpage and direct siphoning from the rivers. Sprinkler irrigation is estimated to have tripled in 1977, partly due to drought conditions and diversions made inoperative by the flood. About 8,500 acres, or 22 percent of the 38,650 acres of existing farmable land, was idle during 1977. An estimated 2,000 acres were destroyed by the Teton Dam flood (Haskett and others, 1977).

Flood History

The Teton River near St. Anthony (T-B, fig. 2) drains 890 mi^2. Principal tributaries to Teton River are Bitch and Canyon Creeks. Locations and daily discharges of these tributaries for the period of record are published in the annual water-resources data report for Idaho (see U.S. Geological Survey, 1976).

Natural flooding on the Teton River during above-average snowmelt seasons has been a common occurrence since record collection began in 1890.

A combination of warm temperatures and precipitation on snowpacks (usually during late spring) in the mountains results in high sustained flows over several weeks. Flooding becomes a hazard when the discharge reaches 4,000 ft^3/s on the Teton River at St. Anthony gage (T-B) or 1,600 ft^3/s on the North Fork Teton River (NF-A, fig. 2). Streamflow records available for the St. Anthony station (reestablished November 1977) during 1890-93, 1904-9, and 1920-76 indicated peak flows, in cubic feet per second, at the following frequency intervals (U.S. Army Corps of Engineers, 1977):

	10-Year flood	50-Year flood	100-Year flood
North Fork Teton River	1,930	3,600	5,080
South Fork Teton River	2,900	5,400	7,620
Teton River	4,830	9,000	12,700

Average daily discharge at the St. Anthony station for 42 continuous years (1933-75) was 808 ft^3/s. The maximum natural peak flow was 11,000 ft^3/s (February 12, 1962). The duration curve of daily mean flow for the 50 complete water years (1890-93, 1904-9, 1933-75) is shown in figure 3.

During this study, the flow in the North Fork Teton River was 68 percent of average (using 50-year record) in 1977 and 150 percent of average in 1978. Duration curves of long-term flow (40 percent of Teton River) and for the period April 1, 1977, to September 30, 1978, are also shown in figure 3.

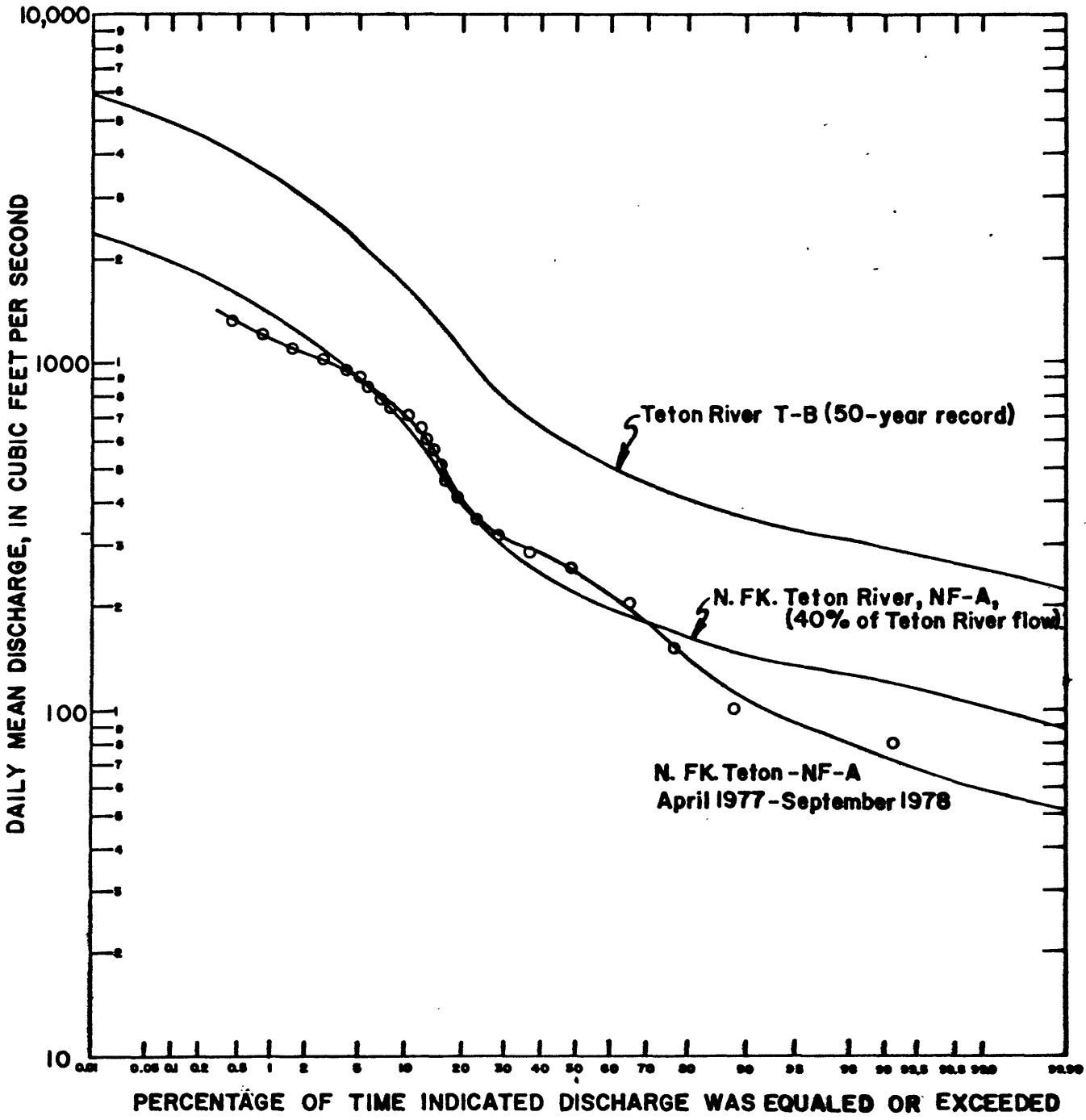


Figure 3. Flow-duration curves of Teton River near St. Anthony (13055000) and North Fork Teton River near Teton (13055198).

FIELD INVESTIGATIONS
Methods Used in Determining Channel Changes

Quantitative methods available to assess channel change on the North Fork Teton River include:

(1) Interpretation of aerial photos depicting areal extent of sediment deposits, channel width, and vegetation

(2) Periodic survey of monumented cross sections

(3) Measurement of solid material in transport

(4) Periodic determination of channel geometry from streamflow measurement

(5) Stability of stage-discharge relation

Item 1 was given minimal interpretation due to high cost, lack of precision in analytical methods, and infrequent aerial coverage during the short period of study. Items 2 through 5 allowed adequate documentation to assess anticipated channel adjustments.

Specific data requirements of items 2 through 5 included measurement of streamflow, suspended- and bedload-sediment rates, particle-size distribution of suspended and bedload sediment, and periodic surveys of channel dimensions, bed elevations, and water-surface slopes.

Six principal sediment and survey data sites (fig. 2 and table 1) were selected to determine channel shape, and hydraulic and water-sediment parameters, based on anticipated spatial coverage and accessibility to the North Fork Teton River channel. Each surveyed subreach comprised 5 to 13 cross sections. Site or subreach number, name, location, and type of data collected are listed in table 1. Water-sediment data collected at miscellaneous sites on the North and South Forks and the main stem Teton River are included in tables 2 and 3.

Daily water discharge at the sites was compiled from periodic water-discharge measurements and triweekly stage readings. These discharges were adjusted for diverted canal flows to establish a daily discharge rate (table 4, back of text).

Flow records are seldom available for the numerous irrigation diversions and return flows that enter along the North Fork Teton River. Daily discharges shown in table 4 should therefore be considered provisional.

Table 1. Site number, name, and location, and type of data collected at main sites and subreaches of North Fork Teton River

Site no.	Name	Latitude and longitude	Type of data collected during 1977-78
13055198	North Fork Teton River at Teton Island bridge near Teton (NF-A)	43°53'53" 111°40'38"	Continuous: water stage. Periodic: water-discharge measurements, water temperature, suspended sediment, bedload, and bed material. 13-section subreach surveyed four times.
13055210	North Fork Teton River at Site NF-B near Teton	43°53'39" 111°41'50"	Periodic: water stage, water-discharge measurements, water temperature, suspended sediment, bedload, and bed material.
13055230	North Fork Teton River at Site NF-C near Sugar City	43°53'06" 111°43'01"	Periodic: water-discharge measurements, water temperature, suspended sediment, bedload, and bed material. 12-section subreach surveyed three times.
13055250	North Fork Teton River at Site NF-D near Sugar City	43°53'13" 111°45'25"	Periodic: water stage (March 1977-November 1977), water-discharge measurements, water temperature, suspended sediment, bedload, and bed material. 12-section subreach surveyed three times.
--	North Fork Teton River at Site NF-E	43°53'05" 111°46'06"	Periodic: bed material. 10-section subreach surveyed three times.
13055270	North Fork Teton River at Site NF-F near Salem	43°52'57" 111°46'37"	Periodic: water-discharge measurements, water temperature, suspended sediment, bedload, and bed material. 12-section subreach surveyed three times.
13055300	North Fork Teton River at Site NF-G near Salem	43°53'10" 111°49'01"	Periodic: water stage, water-discharge measurements, water temperature, suspended sediment, bedload, and bed material. 5-section subreach surveyed three times.

Table 2. Suspended-sediment particle-size distribution, North Fork Teton River

Date of collection	Time (24 hour)	Water temperature (°C)	Discharge (ft^3/s)	Sediment concentration (mg/L)	Sediment discharge (tons/d)	Percent finer than size indicated (mm)										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.50	1.00	2.00
North Fork Teton River at Teton Island Bridge (13055198) NF-A																
04-12-77	1445	10.0	260	129	91	--	--	--	--	--	35	37	41	90	100	
05-11-77	1557	--	259	76	53	--	--	--	--	--	60	67	74	91	98	100
06-10-77	1045	--	664	104	186	--	--	--	--	--	73	80	92	100		
06-10-77	1420	17.0	678	76	139	--	--	--	--	--	92	96	99	100		
06-11-77	1130	16.0	591	93	148	--	--	--	--	--	95	96	98	99	100	
06-13-77	1230	16.5	430	151	175	--	--	--	--	--	95	96	98	100		
04-12-78	0915	8.0	314	58	49	69	85	91	94	96	97	98	99	100		
05-17-78	1330	--	1,120	176	532	--	--	--	--	--	57	62	77	98	100	
05-17-78	1430	8.5	1,090	107	315	--	--	--	--	--	82	85	98	100		
05-18-78	0945	9.0	897	98	237	--	--	--	--	--	52	58	70	96	100	
06-09-78	1720	--	1,340	75	271	--	--	--	--	--	84	91	98	100		
06-09-78	2105	--	1,310	87	308	--	--	--	--	--	77	84	94	99	100	
06-10-78	1145	--	1,430	116	448	--	--	--	--	--	67	72	82	94	100	
06-10-78	1405	--	1,480	121	484	--	--	--	--	--	79	86	94	99	100	
06-10-78	1500	11.5	1,490	202	813	--	--	--	--	--	52	59	75	96	100	

Table 2. Suspended-sediment particle-size distribution, North Fork Teton River (Continued)

Date of collection	Time (24 hour)	Water temperature (°C)	Discharge (ft^3/s)	Sediment concentration (mg/L)	Sediment discharge (tons/d)	Percent finer than size indicated (mm)										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.50	1.00	2.00
North Fork Teton River at Site NF-B (13055210)																
04-08-77	1300	12.5	215	141	82	--	--	--	--	--	93	99	100			
04-09-77	1250	12.0	350	303	286	--	--	--	--	--	86	96	99	100		
04-11-77	1230	10.0	235	98	62	--	--	--	--	--	93	97	100			
04-14-77	0600	7.5	185	146	73	--	--	--	--	--	97	99	100			
04-23-77	1030	9.0	137	67	25	--	--	--	--	--	96	97	100			
04-28-77	1300	16.5	194	53	28	--	--	--	--	--	80	88	100			
05-02-77	1105	12.5	17	26	1.2	--	--	--	--	--	94	100				
05-04-77	1700	10.0	1	83	.22	--	--	--	--	--	82	96	100			
05-11-77	1355	11.5	25	65	4.4	--	--	--	--	--	96	100				
06-10-77	1430	16.5	135	84	31	--	--	--	--	--	90	95	98	98	100	
06-11-77	1145	16.0	111	302	91	--	--	--	--	--	33	36	62	95	100	
06-13-77	1245	18.0	49	151	20	--	--	--	--	--	94	96	98	100		
05-18-78	1050	--	560	92	139	--	--	--	--	--	57	64	77	95	100	
05-18-78	1240	7.5	566	56	86	--	--	--	--	--	84	91	98	100		
06-10-78	1530	12.5	930	148	372	--	--	--	--	--	67	74	87	98	100	

Table 2. Suspended-sediment particle-size distribution, North Fork Teton River (Continued)

Date of collection	Time (24 hour)	Water temperature (°C)	Discharge (ft^3/s)	Sediment concentration (mg/L)	Sediment discharge (tons/d)	Percent finer than size indicated (mm)										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.50	1.00	2.00
North Fork Teton River at Site NF-C (13055230)																
04-08-77	1320	12.5	200	175	94	--	--	--	--	--	93	99	100			
04-09-77	1300	11.5	340	273	251	--	--	--	--	--	80	94	99	100		
04-11-77	1300	9.5	240	106	69	--	--	--	--	--	92	96	100			
04-12-77	0955	7.5	185	62	31	--	--	--	--	--	88	92	96	100		
04-14-77	0620	7.5	170	116	53	--	--	--	--	--	98	100				
04-23-77	1730	10.0	115	71	22	--	--	--	--	--	99	100				
04-28-77	1320	17.0	165	41	18	--	--	--	--	--	92	100				
05-02-77	1200	13.0	26	17	1.2	--	--	--	--	--	97	100				
05-04-77	1715	9.5	5	172	2.3	--	--	--	--	--	88	98	100			
06-10-77	1520	—	147	83	33	--	--	--	--	--	94	96	100			
05-18-78	1350	8.0	590	63	100	--	--	--	--	--	72	78	89	96	97	100
06-10-78	1645	12.0	920	145	360	--	--	--	--	--	73	81	91	99	100	

Table 2. Suspended-sediment particle-size distribution, North Fork Teton River (Continued)

Date of collection	Time (24 hour)	Water temperature (°C)	Discharge (ft^3/s)	Sediment concentration (mg/L)	Sediment discharge (tons/d)	Percent finer than size indicated (mm)									
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.50	1.00	2.00
North Fork Teton River at Site NF-D (13055250)																
04-08-77	1340	--	210	157	89	--	--	--	--	--	95	98	100			
04-09-77	1320	10.5	340	313	287	25	37	50	64	81	92	99	100			
04-11-77	1315	10.5	220	109	65	--	--	--	--	--	96	100				
04-12-77	0930	7.0	180	62	30	--	--	--	--	--	97	100				
04-14-77	0635	7.5	142	70	27	--	--	--	--	--	94	97	100			
04-23-77	1150	11.0	112	70	21	--	--	--	--	--	99	100				
04-28-77	1350	17.0	164	149	66	--	--	--	--	--	88	98	100			
05-02-77	1305	13.5	6.2	97	1.6	--	--	--	--	--	96	98	98	98	100	
05-04-77	1725	9.0	8.6	65	1.5	--	--	--	--	--	98	100				
05-08-77	1800	17.0	.7	13	.02	--	--	--	--	--	97	100				
06-10-77	1450	18.0	127	81	28	--	--	--	--	--	95	98	99	100		
06-11-77	1205	16.5	107	122	35	--	--	--	--	--	51	54	76	99	100	
06-13-77	1050	19.0	67	65	12	--	--	--	--	--	94	96	98	100		
05-18-78	1520	8.0	630	90	153	--	--	--	--	--	80	88	96	99	100	

Table 2. Suspended-sediment particle-size distribution, North Fork Teton River (Continued)

Date of collection	Time (24 hour)	Water temperature (°C)	Discharge (ft^3/s)	Sediment concentration (mg/L)	Sediment discharge (tons/d)	Percent finer than size indicated (mm)									
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.50	1.00	2.00
North Fork Teton River at Site NF-F (13055270)																
04-08-77	1350	13.5	202	200	109	--	--	--	--	--	95	99	100			
04-09-77	1330	11.5	357	429	414	34	41	52	64	79	91	99	100			
04-11-77	1330	11.5	267	114	82	--	--	--	--	--	96	98	99	99	100	
04-14-77	0650	7.5	203	69	38	--	--	--	--	--	92	95	96	100		
04-23-77	1220	11.0	155	52	22	--	--	--	--	--	99	100				
04-28-77	1420	17.5	185	174	87	--	--	--	--	--	84	98	100			
05-02-77	1400	13.5	13	93	3.3	--	--	--	--	--	99	100				
05-04-77	1745	10.0	37	173	17	--	--	--	--	--	92	99	100			
06-10-77	1505	18.5	189	66	34	--	--	--	--	--	97	99	100			
06-11-77	1225	16.0	168	114	52	--	--	--	--	--	44	47	64	97	100	
06-13-77	1400	20.0	99	41	11	--	--	--	--	--	98	100				
05-18-78	1545	--	590	309	492	21	26	32	40	54	68	77	90	99	100	
06-10-78	1720	11.0	955	371	957	--	--	--	--	--	53	64	78	97	100	

Table 2. Suspended-sediment particle-size distribution, North Fork Teton River (Continued)

Date of collection	Time (24 hour)	Water temperature (°C)	Discharge (ft^3/s)	Sediment concentration (mg/L)	Sediment discharge (tons/d)	Percent finer than size indicated (mm)										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.50	1.00	2.00
North Fork Teton River at Site NF-G (13055300)																
04-08-77	1410	14.0	170	104	48	--	--	--	--	--	99	100				
04-09-77	1350	12.0	350	274	259	27	42	57	74	89	98	100				
04-11-77	1550	10.5	275	119	88	--	--	--	--	--	98	100				
04-14-77	0705	7.5	216	63	37	--	--	--	--	--	96	100				
04-23-77	1235	10.5	170	39	18	--	--	--	--	--	98	100				
04-28-77	1435	17.5	180	42	20	--	--	--	--	--	77	94	100			
05-02-77	1420	14.0	13	75	.53	--	--	--	--	--	95	100				
05-04-77	1810	9.5	37	23	2.3	--	--	--	--	--	87	100				
05-08-77	1820	16.0	3	27	.22	--	--	--	--	--	92	100				
06-10-77	1525	18.0	165	84	37	--	--	--	--	--	98	99	100			
06-11-77	0940	14.0	188	54	27	--	--	--	--	--	97	100				
06-11-77	1240	16.5	175	61	29	--	--	--	--	--	94	95	97	100		
06-13-77	1415	--	108	43	13	--	--	--	--	--	96	98	100			
05-18-78	1610	7.5	633	287	491	22	27	34	41	55	72	83	94	99	99	100
06-10-78	1750	12.0	748	393	794	--	--	--	--	--	51	63	79	96	99	100

Table 2. Suspended-sediment particle-size distribution, North Fork Teton River (Continued)

Date of collection	Time (24 hour)	Water temperature (°C)	Discharge (ft^3/s)	Sediment concentration (mg/L)	Sediment discharge (tons/d)	Percent finer than size indicated (mm)										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.50	1.00	2.00
MISCELLANEOUS SITES																
Teton River at Hog Hollow (T-A)																
04-12-78	1600	--	832	62	139	--	--	--	--	--	--	--	--	--	--	--
Teton River near St. Anthony (T-B)																
04-12-78	1345	--	832	46	103	--	--	--	--	--	99	99	99	99	100	
04-13-78	1245	8.5	778	58	122	--	--	--	--	--	--	--	--	--	--	--
06-10-78	0920	--	3,450	129	1,200	--	--	--	--	--	81	88	96	99	100	
Teton River 2 miles above Fork (T-C)																
04-12-78	1300	9.0	674	40	73	--	--	--	--	--	--	--	--	--	--	--
04-13-78	0940	--	627	54	91	--	--	--	--	--	--	--	--	--	--	--
04-13-78	1025	8.0	627	39	66	--	--	--	--	--	100					
Teton River at Forks (T-D)																
03-31-77	1710	5.5	290	33	26	--	--	--	--	--	--	--	--	--	--	--
05-12-77	1150	11.5	411	16	18	--	--	--	--	--	--	--	--	--	--	--
04-12-78	1045	8.5	674	62	113	--	--	--	--	--	--	--	--	--	--	--
North Fork Teton River below Pincock-Byington Canal (NF-PBC)																
04-12-77	1225	9.0	277	149	111	--	--	--	--	--	--	--	--	--	--	--
10-18-77	1400	--	163	14	6.2	--	--	--	--	--	--	--	--	--	--	--
Teton Island Canal (TIC)																
03-30-77	1030	2.5	33	21	1.9	--	--	--	--	--	--	--	--	--	--	--
03-31-77	1430	6.0	67	20	3.6	--	--	--	--	--	--	--	--	--	--	--
04-05-77	1300	10.5	70	39	7.4	--	--	--	--	--	--	--	--	--	--	--
04-23-77	1100	9.5	132	62	22	--	--	--	--	--	--	--	--	--	--	--
05-06-77	1700	10.0	163	26	11	--	--	--	--	--	--	--	--	--	--	--
05-11-77	1435	11.5	174	67	31	--	--	--	--	--	--	--	--	--	--	--
10-18-77	1410	--	81	12	2.6	--	--	--	--	--	--	--	--	--	--	--
07-12-78	1500	17.5	477	23	30	--	--	--	--	--	--	--	--	--	--	--
South Fork Teton River (SF-A)																
03-31-77	1730	5.5	174	38	18	--	--	--	--	--	--	--	--	--	--	--
10-18-77	1230	10.0	39	13	1.4	--	--	--	--	--	--	--	--	--	--	--
12-06-77	1300	--	84	9	2.0	--	--	--	--	--	--	--	--	--	--	--
06-10-78	1055	--	2,010	79	429	--	--	--	--	--	84	90	96	99	100	

Table 3. Bedload and streamflow data for selected sites

Date	Water discharge (ft^3/s)	Average depth (ft)	Width (ft)	Average velocity (ft^3/s)	Estimated stream roughness (n)	Water temperature (°C)	Number of sampling points	Computed bedload (composite bed material)	Measured bedload discharge (tons/d)	Remarks[1]	Particle-size distribution of bedload sediment in transit within 0.25 foot of bed surface. Bedload sieve diameter, in percent finer than size indicated (mm)										
											0.062	0.125	0.250	0.50	1.00	2.00	4.00	8.00	16.0	32.0	64.0
13055198 North Fork Teton River at Teton Island Bridge (NF-A)																					
01-04-77	85	3.12	34	0.80	0.050	0.0	20	0.01	0	Ice, snow	—	—	—	—	—	—	—	—	—	—	—
03-08-77	135	1.03	41	3.21	.040	4.0	10	62	.02	2 US	—	—	—	—	100						
03-08-77	131	1.25	62	1.69	.040	4.0	13	12.9	0	7 US	—	—	—	—	—	—	—	—	—	—	—
04-12-77	260	1.72	60	2.52	.036	10.0	16	18	1.6	1 US	1	1	14	88	96	99	100				
04-13-77	254	2.86	44	2.02	.040	7.5	10	2.6	13.4	2 DS	—	—	5	73	97	99	100				
04-15-77	286	1.85	48	3.21	.045	9.5	14	52	11.2	4 DS	—	—	5	56	88	96	99	100			
05-11-77	259	1.87	49	2.82	.044	11.0	20	28	7.4	4 DS	—	1	7	69	92	97	99	100			
05-12-77	230	1.45	52	3.05	.021	11.5	16	24	16.8	3 US	—	—	2	53	92	99	100				
06-10-77	695	4.00	77	2.26	.031	--	12	3.4	38.4	—do—	—	—	8	57	79	87	92	94	99	100	
06-10-77	695	4.00	77	2.26	.031	--	13	3.4	34.1	—do—	—	—	6	48	89	96	98	99	100		
10-18-77	163	--	48	--	.031	7.5	10	--	.60	3 US											
10-18-77	159	1.24	47	2.73	.031	7.5	14	24	.03	3 DS											
10-18-77	163	--	77	--	--	7.5	10	--	.10	6 US											
12-07-77	114	.92	45	2.78	.035	--	--	34	0	3 US											
04-12-78	314	1.72	55	3.32	.029	8.0	12	46	5.3	4 US	—	1	13	81	96	99	100				
05-18-78	1,080	5.16	64	3.27	.031	9.0	6	17	205	—do—	—	—	1	10	48	75	87	95	99	100	
05-18-78	1,080	5.16	64	3.27	.031	9.0	5	17	200	—do—	—	—	2	26	73	86	92	95	97	100	
06-09-78	1,360	5.50	75	3.30	.031	--	7	17	1.5	—do—	—	1	30	88	98	100					
06-09-78	1,360	5.50	75	3.30	.031	--	7	17	38.5	—do—	—	1	8	42	74	82	86	91	95	100	
06-10-78	1,430	5.61	75	3.42	.031	11.5	6	19	15.9	—do—	—	1	15	70	94	100					
06-10-78	1,420	5.60	75	3.40	.031	--	5	19	198	—do—	—	—	1	7	23	45	67	86	97	100	
07-11-78	777	4.28	63	2.88	.031	17.5	7	12	.29	—do—	—	—	10	100							
07-11-78	777	4.28	63	2.88	.031	17.5	7	12	12.7	—do—	—	—	4	36	81	94	96	98	100		
07-12-78	785	4.30	61	--	.031	--	7	14	2.7	—do—	—	—	5	42	72	90	100				
07-13-78	766	4.35	62	2.84	.031	16.0	5	11	47.2	—do—	—	—	1	8	27	50	72	87	95	100	
13055210 (Site NF-B)																					
03-31-77	30	0.70	40	1.08	0.030	6.0	16	0.31	0.04		—	—	—	100							
10-18-77	82	1.19	42	1.64	.030	10.0	10	3.4	0		—	—	—	--	--	—	—	—	—	—	—
04-11-78	272	2.74	46	2.16	.030	10.5	11	7.0	1.2		—	1	11	48	67	79	96	100			
05-18-78	566	5.28	49	2.19	.030	6.5	6	3.1	111		—	—	2	15	63	88	94	97	100		
06-10-78	929	7.12	49	2.66	.030	--	5	6.7	231		—	—	1	10	49	71	84	92	97	100	
06-10-78	929	7.12	49	2.66	—	--	4	—	250		—	—	1	10	70	87	92	96	99	100	
07-11-78 to 07-13-78	196	1.79	40	2.74		17.0	40	—	12.1	Composite sample	—	—	2	23	66	88	96	99	100		

Table 3. Bedload and streamflow data for selected sites (Continued)

Date	Water discharge (ft^3/s)	Average depth (ft)	Width (ft)	Average velocity (ft^3/s)	Estimated stream roughness (n)	Water temperature (°C)	Number of sampling points	Computed bedload (composite bed material)	Measured bedload discharge (tons/d)	Remarks[1]	Particle-size distribution of bedload sediment in transit within 0.25 foot of bed surface. Bedload sieve diameter, in percent finer than size indicated (mm)										
											0.062	0.125	0.250	0.50	1.00	2.00	4.00	8.00	16.0	32.0	64.0
13055230 (Site NF-C)																					
03-08-77	28	—	48	—		—	9	—	2.0	3 DS	—	—	2	27	48	64	87	100			
03-30-77	33	.52	43	1.49	.039	2.5	15	.21	.11	6 US	—	—	—	—	—	100					
03-31-77	25	.80	38	.83	--	3.5	—	—	0	2 DS	—	—	—	—	—	—	—	—	—	—	—
04-12-77	198	1.31	48	3.15	.033	7.5	13	65	2.2	3 DS	1	1	12	72	91	97	100				
06-10-77	147	1.68	47	1.85	.034	—	8	3.4	5.5	Bridge	—	1	10	55	78	92	98	100			
10-18-77	94	—	45	—	--	10.0	10	--	2.4	3 DS	—	—	—	—	—	—	—	—	—	—	—
10-18-77	94	.73	44	2.91	.037	10.0	10	35	4.1	6 US	—	—	—	—	—	—	—	—	—	—	—
04-11-78	267	1.91	42	3.33	.032	11.0	10	49	3.1	3 DS	—	--	4	36	78	94	99	100			
05-18-78	585	3.48	56	3.00	.030	—	—	17	—	Bridge	—	—	—	—	—	—	—	—	—	—	—
06-10-78	930	—	97	—	--	—	10	--	50	Bridge/ composite	—	—	3	27	65	84	93	95	95	97	
07-11-78	232	1.84	39	3.22	--	17.5	8	--	12	4 DS	--	—	—	—	—	—	—	—	—	--	—
07-12-78	224	2.00	41	2.73	--	17.0	9	--	12	3 DS	—	—	—	—	—	—	—	—	—	—	—
13055250 (Site NF-D)																					
03-08-77	28	0.62	23	1.94	—	6.0	9	—	—	3 DS	—	—	--	--	--	--	—	--	—	--	--
03-30-77	63	1.21	36	1.44	—	0.0	10	—	0.24	Bridge	—	—	—	—	—	100					
04-11-77	203	2.14	55	1.72	0.029	11.0	—	1.1	0	—do—	—	—	—	—	—	—	—	—	—	—	—
04-13-77	126	1.08	60	1.97	.040	11.5	15	40	.28	6 US	—	--	11	66	86	97	100				
04-14-77	114	1.09	44	2.38	.026	6.5	9	9.2	.65	2 US	—	—	3	35	71	88	100				
10-19-77	80	.72	58	1.91	.029	8.5	—	.09	.03	3 DS	—	--	--	--	—	—	--	--	—	--	—
12-07-77	77	.52	52	2.82	—	—	—	—	—	6 DS	—	--	—	--	--	--	—	--	—	--	—
04-11-78	234	1.06	62	3.56	.035	11.0	11	193	5.2	5 DS	--	1	4	33	68	82	88	91	100		
07-11-78	228	1.51	56	2.69	—	17.0	11	—	2.1	1 DS	—	—	5	50	89	100					
07-12-78	242	1.65	55	2.68	—	16.0	11	—	1.0	1 DS	—	1	9	60	90	100					
07-13-78	226	1.59	55	2.58	—	15.5	13	—	1.5	1 DS	--	--	5	48	80	100					
13055270 (Site NF-F)																					
04-15-77	211	.81	92	2.83	.030	7.0	18	48	3.0	2 DS	—	—	--	14	36	54	64	75	84	100	
10-19-77	91	.66	62	2.21	.030	—	—	9.3	.07	2 DS	—	—	—	—	—	—	—	—	—	--	—
04-11-78	244	.90	96	2.82	.030	10.0	16	45	5.6	2 DS	—	--	4	44	32	96	99	100			
05-18-78	590	—	80	—	—	—	5	—	28	Bridge	1	2	15	69	93	98	100				
06-10-78	850	—	89	—	—	—	5	—	217	—do—	—	—	2	14	28	41	54	64	75	91	100
07-11-78	249	1.47	63	2.70	—	16.0	11	—	12.4	5 DS	—	—	2	24	55	72	82	87	94	100	
07-11-78	257	1.47	64	2.73	—	15.5	11	—	6.4	4 DS	--	--	7	42	65	71	—	--	76	100	
13055300 (Site NF-G)																					
03-29-77	6.5	.14	60	.77	—	0.5	—	—	0	Wier	--	--	--	--	--	--	--	--	--	--	--
04-11-77	267	3.12	53	1.62	.030	11.0	—	2.9	0	1 US	--	--	--	--	--	--	--	--	--	--	--
04-14-77	136	.72	60	—	.030	—	—	.02	—	Wier	--	--	--	--	--	--	--	--	--	--	--
06-11-77	188	2.19	36	2.38	.030	—	5	.47	0	Bridge	--	--	--	--	--	--	--	--	--	--	--
10-19-77	95	1.39	70	—	.050	—	—	.06	--	3 DS	--	--	--	--	--	--	--	--	--	--	--
04-11-78	251	2.18	64	1.80	.045	8.5	12	.18	.07	4 DS	--	--	--	--	--	--	--	--	--	--	--
05-18-78	633	3.82	40	4.14	.030	7.5	5	3.8	1.7	Bridge	3	4	39	92	100						
06-10-78	748	4.33	41	4.22	.030	11.5	5	5.6	3.8	—do—	—	1	16	68	84	100					
07-11-78	261	3.44	36	2.10	—	15.0	7	—	1.0	—do—	—	2	14	57	91	100					
07-12-78	236	1.47	75	2.14	—	14.5	13	—	1.2	3 DS	--	1	8	71	93	100					
07-13-78	211	1.39	75	2.02	--	14.5	16	—	1.1	3 DS	—	—	--	--	--	--	--	--	--	--	--

[1]Cross-section numbers designated as US (upstream) or DS (downstream)

Table 3. Bedload and streamflow data for selected sites (Continued)

Date	Water discharge (ft^3/s)	Average depth (ft)	Width (ft)	Average velocity (ft^3/s)	Estimated stream roughness (n)	Water temperature (°C)	Number of sampling points	Computed bedload (composite bed material)	Measured bedload discharge (tons/d)	Particle-size distribution of bedload sediment in transit within 0.25 foot of bed surface. Bedload sieve diameter, in percent finer than size indicated (mm)										
										0.062	0.125	0.250	0.50	1.00	2.00	4.00	8.00	16.0	32.0	64.0
MISCELLANEOUS SITES																				
Teton River at Hog Hollow (T-A)																				
04-12-78	832	—	200	—	—	—	18	—	0.14	—	—	—	—	—	—	—	—	—	—	—
Teton River near St. Anthony (T-B)																				
12-06-77	371	1.84	98	2.06	0.024	—	16	6.4	< .01	—	—	—	—	—	—	—	—	—	—	—
04-04-78	845	2.42	101	3.46	.024	3.0	—	87	—	—	—	—	—	—	—	—	—	—	—	—
04-12-78	832	2.39	100	3.47	.024	9.0	18	74	4.2	—	—	1	17	52	68	78	89	100		
04-13-78	778	2.46	100	3.16	.024	8.5	18	46	4.2	—	—	2	18	38	46	53	59	67	100	
05-03-78	1,100	2.66	101	4.09	.024	9.5	—	148	—	—	—	—	—	—	—	—	—	—	—	—
05-17-78	2,500	4.31	104	5.58	.024	8.0	—	181	—	—	—	—	—	—	—	—	—	—	—	—
06-10-78	3,450	—	105	—	—	—	5	—	33.8	—	1	5	26	40	47	52	57	58	61	100
06-10-78	3,450	—	105	—	—	—	7	—	374	—	—	1	5	10	17	25	35	53	76	100
06-11-78	4,350	5.80	111	6.76	.024	—	—	1,010	—	—	—	—	—	—	—	—	—	—	—	—
Teton River 2 miles above Fork (T-C)																				
04-12-78	674	—	100	—	.030	9.0	18	158	.54	—	—	8	61	86	96	100				
04-13-78	627	1.95	94	3.42	.039	—	16	139	4.3	—	—	1	10	20	28	36	51	71	100	
Teton River at Forks (T-D)																				
05-12-77	411	1.90	111	1.95	.028	11.5	17	16	3.7	—	—	4	50	92	99	100				
04-12-78	674	2.17	126	2.47	.028	8.5	15	25	17.3	—	—	8	63	87	96	99	100			
North Fork Teton River below Pincock-Byington Canal (NF-PBC)																				
03-08-77	135	1.0	45	3.00	.052	—	12	.53	1.6	—	1	7	57	82	96	100				
04-12-77	277	2.80	41	2.42	.052	9.0	10	8.0	2.0	—	1	12	55	63	81	93	94	100		
Teton Island Canal (TIC)																				
03-31-77	67	1.26	37	1.45	—	6.0	15		.23	—	—	2	16	33	59	74	100			
07-12-78	477	2.65	43	4.18	—	17.5	6	—	.90	—	—	5	100							
South Fork Teton River (SF-A)																				
03-31-77	174	1.14	49	3.12	.035	5.5	16	61	4.9	—	—	4	58	83	88	92	95	100		
10-18-77	39	.54	47	1.54	.035	10.0	11	3.3	.05	—	—	—	—	100						
04-12-78	360	—	59	—	—	—	12	—	.74	—	—	9	44	68	84	94	100			
06-10-78	2,010	—	60	—	—	—	6	—	4.1	—	2	8	26	65	77	86	96	100		

Sediment Transport

Total sediment discharge of a stream can be divided into two parts: (1) Fine sediment discharge, which consists of particles finer than 0.062 mm, usually not found in significant quantities on the streambed; and (2) coarse sediment discharge, which consists of particles greater than 0.062 mm, found in appreciable quantity at the surface of the streambed.

All the fine sediment and generally the major part of the coarse sediment are transported in suspension and usually are sampled through the depth of flow to within 0.3 ft of the streambed. This sampled part of the total sediment discharge is referred to as the suspended-sediment discharge. Data on sediment discharge are published in the annual water-resources data report for Idaho (see U.S. Geological Survey, 1976).

Part of the coarse sediment is transported by sliding, skipping, and rolling along the bed. This part of the load in contact with the bed is generally referred to as the bedload. Total sediment discharge is the sum of the suspended-sediment discharge, the bedload, and any unsampled coarse sediment.

The major source of coarse sediment transported in the North Fork Teton River is from upstream unconsolidated sand and gravel deposits and from reworked levee material. The fine sediment transported generally originates from erosion of irrigated farmland and exposed (nonvegetated) streambanks. Availability of local fine-grained material is somewhat affected by frost wedging and bank sloughing into the channel. Bank undercutting does not seem to be an active erosional means by which fine sediment enters the river. The rate of sediment transport depends on availability of sediment sources and stream competency of flow to transport various coarse materials. The flow is assumed sufficiently competent to transport most fine materials entering the river system.

DATA COLLECTION

Suspended Sediment

Suspended-sediment samples were collected triweekly at six sites to determine average daily concentration of the water-sediment mixture. These samples, collected with standard depth-integrating samplers (U.S. Inter-Agency Committee on Water Resources, 1963), were taken at a minimum of three verticals in the stream cross section at each of the sites. Part of the samples collected at the six sites were analyzed to determine the average particle-size distribution of sediment transported.

Suspended-sediment data obtained for mean concentration and particle-size distribution at principal and miscellaneous sites are summarized in table 2.

Particle-size distribution of the samples ranged from 33 to 100 percent finer than 0.062 mm and averaged 99.9 percent finer than 1 mm. Approximately 600 samples for which only sediment concentration was analyzed were not included in table 2. Sediment concentration for these samples ranged from 1 to 622 mg/L.

Daily suspended-sediment discharge, in tons per day (table 4, back of text), equals daily mean water discharge, in cubic feet per second, times daily mean suspended-sediment concentration, in milligrams per liter, times the coefficient 0.0027.

Sediment-transport relations for the period of this study are expressed as a logarithmic plot of sediment discharge versus water discharge. Each point on the suspended-sediment curve (fig. 4) represents an average value of suspended-sediment discharge for a given range of water discharge (table 5). Variation in suspended sediment at similar streamflow values is dependent on rainfall intensities during individual storm periods, snowmelt periods (usually late May-early June), and man's activities along the stream channel.

Bedload Sediment

Bedload, as discussed in this report, includes most of the coarse sediment transported in a zone within 0.25 ft of the streambed. Bedload was measured with a sampler (Helley and Smith, 1971) specifically designed for collecting coarse material within this transport zone. Because this bedload sampler has not yet been calibrated, a trap efficiency coefficient of 1.0 was assumed.

Samples were collected to determine discharge rate and size distribution of particles coarser than 0.2 mm (bag-mesh size) and finer than 76 mm (orifice dimensions). Sampling time (20-60 seconds), number of equally spaced sampling verticals (4-20), and stream width were recorded for each sample. Bedload discharge equals the sediment collected, in grams per minute, times width of streambed, in feet, times 0.00635, a conversion factor to express the product in tons per day. Samples collected at selected sites and dates were composited, dried, and weighed to determine mean bedload-discharge rate. Cross-sectional samples were sieved and weight adjusted to determine particle-size distribution (expressed in percent by weight). Bedload rates and particle-size distribution are listed in table 3.

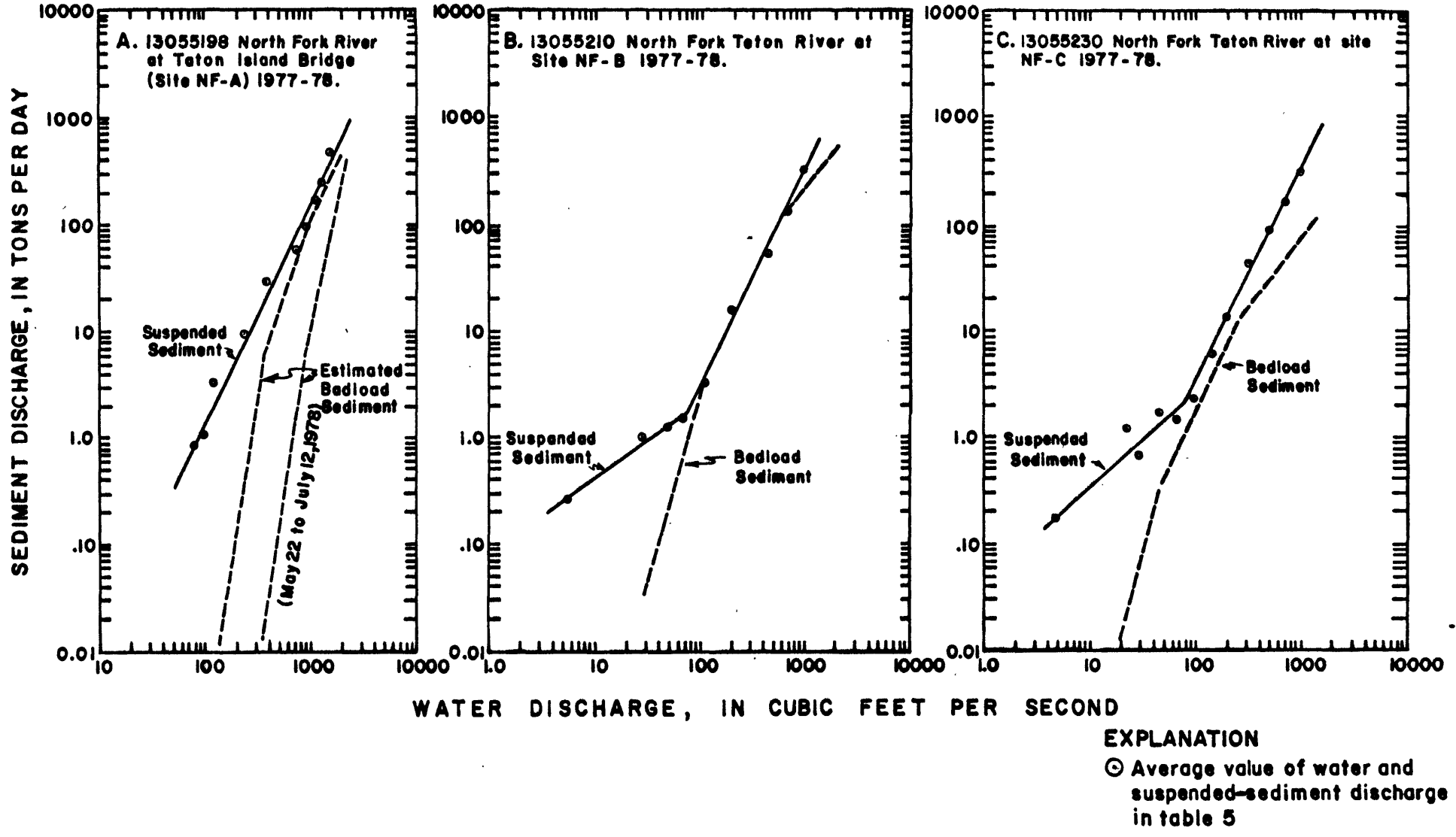


Figure 4. Relation of water discharge to suspended- and bedload-sediment discharge.

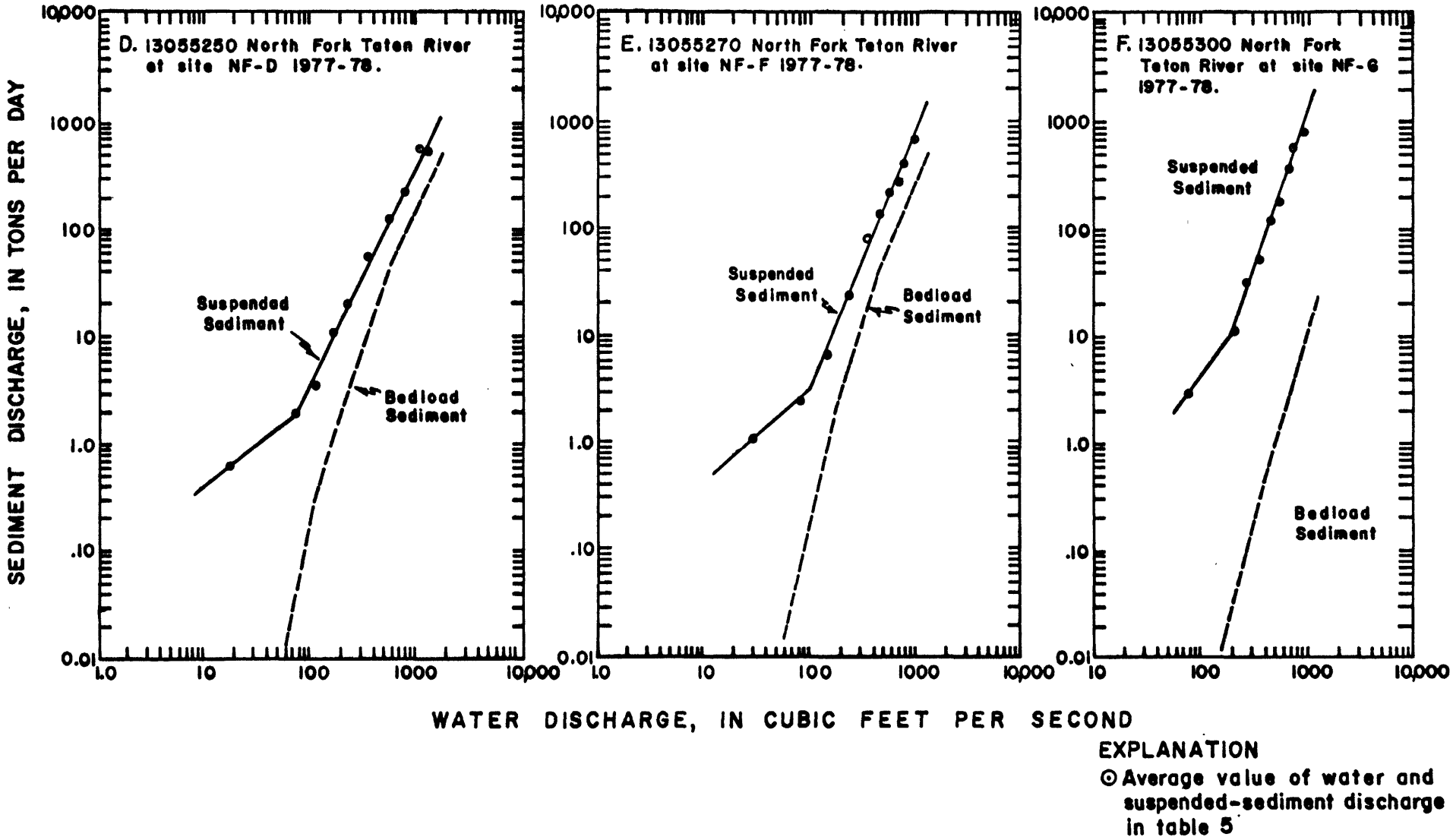


Figure 4. Relation of water discharge to suspended- and bedload-sediment discharge (Continued).

Table 5. Relation and frequency of occurrence of water and suspended-sediment discharge (April 1, 1977, to September 30, 1978)

Range in water discharge (ft^3/s)	Number of daily occurrences	Average water discharge (ft^3/s)	Average suspended-sediment discharge (tons)
North Fork Teton River at Teton Island Bridge 13055198 (NF-A)			
< 50	0	0	0
50 - 80	5	74.8	.84
80 - 100	62	91.6	1.03
100 - 150	64	118	3.33
150 - 300	229	228	9.63
300 - 600	116	373	31.4
600 - 800	37	710	58.7
800 - 1,000	20	909	96.8
1,000 - 1,200	11	1,084	177
1,200 - 1,300	2	1,240	260
1,300 - 1,500	2	1,425	500
North Fork Teton River at Site NF-B (13055210)			
.01 - 22	66	5.63	0.25
22 - 40	31	28.90	.97
40 - 60	21	49.00	1.19
60 - 80	48	68.29	1.47
80 - 150	117	106.95	3.19
150 - 300	113	199.97	15.21
300 - 600	48	440.00	53.27
600 - 800	12	693.33	130.17
800 - 1,000	4	935.00	339.00
North Fork Teton River at Site NF-C (13055230)			
.01 - 19	62	4.67	.17
19 - 25	8	22.00	1.21
25 - 35	24	28.46	.69
35 - 50	11	41.46	1.76
50 - 80	59	65.16	1.46
80 - 120	80	93.43	2.31
120 - 160	58	136.79	6.23
160 - 250	72	193.67	13.8
250 - 400	44	306.93	45.71
400 - 600	30	487.50	93.87
600 - 800	9	685.56	173.78
800 - 1,000	3	916.67	345.33

Table 5. Relation and frequency of occurrence of water and suspended-sediment discharge (Continued)
(April 1, 1977, to September 30, 1978)

Range in water discharge (ft^3/s)	Number of daily occurrences	Average water discharge (ft^3/s)	Average suspended-sediment discharge (tons)
North Fork Teton River at Site NF-D (13055250)			
.01 - 50	109	15.47	.58
50 - 80	63	66.58	1.84
80 - 130	95	100.08	3.35
130 - 180	66	150.56	10.52
180 - 250	57	208.47	19.38
250 - 400	25	309.40	54.8
400 - 600	32	477.66	121.44
600 - 800	9	676.67	228.67
800 - 1,000	3	930.00	591.33
1,000 - 1,500	1	1,100.00	564.00
North Fork Teton River at Site NF-F (13055270)			
.01 - 58	94	30.06	1.00
58 - 100	74	79.77	2.37
100 - 200	162	143.04	6.42
200 - 300	65	236.14	22.52
300 - 400	17	350.24	79.0
400 - 500	22	451.59	133.36
500 - 600	11	542.27	212.64
600 - 700	7	648.57	277.71
700 - 800	4	728.75	408.50
800 - 1,000	4	901.25	708.50
North Fork Teton River at Site NF-G (13055300)			
.01 - 175	266	76.54	2.81
175 - 250	96	207.12	11.54
250 - 300	26	269.11	32.64
300 - 400	27	348.33	54.12
400 - 500	16	452.81	120.13
500 - 600	15	527.33	184.20
600 - 700	8	647.50	381.13
700 - 800	2	725.00	587.0
800 - 1,000	4	867.50	853.0

Sampled bedload ranged from 25 to 100 percent finer than 4 mm. About 90 percent of the averaged bedload was finer than 4 mm, and 71 percent was finer than 1 mm.

To supplement definition of the bedload-water discharge relation, bedload rates also were computed using the Meyer-Peter and Muller (MPM) bedload formula. The MPM formula commonly is preferred over other predictive equations for streams with coarse bed material. This formula was developed in Switzerland and modified for use in the United States by the U.S. Bureau of Reclamation (1960). The equation is:

$$G_s = 1.606B\left[3.306\left(\frac{Q_s}{Q}\right)\left(\frac{D_{90}^{1/6}}{n_s}\right)^{3/2} dS - 0.627\, D_m\right]^{3/2}$$ where,

G_s = total bedload discharge, in tons per day;

B = bottom width of stream channel, in feet;

Q_s = water discharge that transports a specific bedload, in cubic feet per second;

Q = total water discharge, in cubic feet per second;

D_{90} = particle size at which 90 percent of the bed material is finer, in millimeters;

n_s = Manning's roughness (n) value for the streambed;

d = depth of flow, in feet;

S = slope of energy gradeline, in feet per foot;

D_m = effective size of bed material, in millimeters;

($D_m = \Sigma D\Delta p/100$, where D is the geometric mean diameter of particles in a given size fraction, and p is the percent by weight in that size fraction.)

Bedload-transport relations, based on sampled and computed rates (table 3) for the six principal sites, are shown in figure 4. In general, bedload rates (table 3) computed by the MPM method disagree somewhat with rates of samples collected using the Helley-Smith sampler. Except for site NF-A, samples collected with the Helley Smith sampler were assumed adequate to define the bedload relations at sites NF B-G (fig. 4).

The uncertainty of the bedload relation at site NF-A is due to the variations of bedload at the various cross sections, ongoing upstream levee construction, channel work at upstream forks, and bedload sampling error (sample could be overestimated if sampler gouged the bed or underestimated if sampler left the bed during the high-flow sampling periods). Minimal channel change, indicated by data of surveys, suggests using a conservative bedload relation during high flows in 1978. Considering the above difficulties, two bedload relations were used for 1977-78. These two relations are assumed to be representative of prevailing transport conditions; however, the bedload relation at site NF-A should be substantiated by additional data collection at the bridge.

Bed Material

Streambed material was collected on the North Fork Teton by shovel (0-0.5 ft depths) during low- or no-flow periods. Particle-size distribution of this material was determined by sieve analyses. Average mean particle size was 12 mm (gravel). About 20 percent of average bed material was finer than 1.0 mm. Variations in particle-size distribution for individual cross sections are shown in table 6. Average particle-size distribution for each subreach is shown in figure 5.

Although not sampled as bed material, several blocks of rock (up to 4x4 ft, presumably derived from riprap placement) were in the streambed.

Total Sediment Load

Total sediment load was defined previously as suspended-sediment load, plus bedload, plus the unsampled coarse load. If all unsampled coarse sediment discharge is contained within 0.25 ft of the bed, then, for purposes of this study, total sediment discharge is the suspended-sediment discharge plus the sampled bedload. (About 100 percent of material sampled in suspension, above 0.3 ft, was finer than 2 mm. The diameter of the intake nozzle of the sampler is about 6 mm.) For unmeasured bedload sections, the total load is the sampled suspended load plus the MPM bedload.

Estimated total sediment discharge during the period of collection for the six principal sites is summarized in table 7.

Table 6. Bed-material particle-size distribution

Date of collection	Location of cross section	Sampling point	Bed-material sediment: Percent finer than sieve size indicated (mm) 0.062	0.125	0.250	0.50	1.0	2.0	4.0	5.6	8.0	16.0	32.0	45.0	64.0	90.0
North Fork Teton River at Teton Island Bridge NF-A (13055198)																
03-08-77	7 US	5	1	2	7	17	25	30	36	40	46	61	84	95	100	
04-13-77	3 DS	1	--	--	1	6	11	15	20	24	30	49	81	96	100	
12-07-77	5-6 US	2	--	--	2	7	14	21	26	30	34	50	74	80	96	100
12-07-77	3 US	2	1	2	4	11	16	20	24	27	31	48	77	88	100	
	Average		1	2	4	10	17	22	27	30	35	52	79	90	99	100
North Fork Teton River at Site NF-B (13055210)																
03-31-77	100 ft US	2	1	4	8	21	44	52	59	62	68	81	96	98	100	
10-18-77	100 ft US	2	1	2	4	17	35	44	54	60	67	83	96	100		
12-07-77	100 ft US	2	--	1	3	14	26	35	46	51	60	73	86	92	100	
	Average		1	2	5	17	35	44	53	58	65	79	93	97	100	
North Fork Teton River at Site NF-C (13055230)																
03-30-77	6 US	3	--	1	3	6	11	16	23	27	34	52	72	86	96	100
03-30-77	5 US	2	1	2	5	24	60	68	72	74	76	83	94	96	100	
03-30-77	4 US	2	4	9	18	58	65	72	78	81	84	88	96	98	100	
03-30-77	3 US	2	1	2	6	12	16	20	25	29	35	56	81	91	100	
03-30-77	2 US	2	1	2	6	15	20	24	32	36	45	67	82	88	100	
03-30-77	1 US	2	1	2	5	10	15	20	24	28	33	50	81	91	100	
03-31-77	2 DS	2	2	5	9	20	22	32	40	43	48	58	78	87	96	100
03-31-77	3 DS	2	--	1	2	6	12	16	22	26	32	50	74	82	97	100
03-31-77	4 DS	2	2	4	8	15	20	24	28	32	37	55	80	92	100	
03-08-77	3 DS	3	1	3	5	9	15	19	23	26	31	44	66	85	100	
12-07-77	6 US	2	--	1	2	5	8	12	16	18	22	35	58	75	87	100
12-07-77	2 DS	2	1	2	5	16	28	33	37	39	43	56	81	93	100	
	Average		1	3	6	16	24	30	35	38	43	58	79	89	98	100
North Fork Teton River at Site NF-D (13055250)																
12-02-76	2 US	5	1	2	4	10	16	22	30	34	38	51	71	86	96	100
12-02-76	1 US	6	1	2	4	11	19	27	37	42	48	65	89	100		
12-02-76	5 DS	4	--	1	3	12	25	31	37	41	45	60	89	98	100	
03-30-77	4 DS	3	--	1	3	8	16	22	29	33	39	56	84	95	100	
12-07-77	6 US	2	1	2	4	9	16	22	28	31	36	50	77	86	96	100
12-07-77	3 US	2	1	1	3	8	13	18	24	28	33	47	67	80	87	100
12-07-77	5 DS	2	--	--	1	3	6	8	13	15	20	32	60	77	94	100
	Average		1	1	3	9	16	21	28	32	37	52	77	89	96	100

Table 6. Bed-material particle-size distribution
(Continued)

Date of collection	Location of cross section	Sampling point	Bed-material sediment: Percent finer than sieve size indicated (mm) 0.062	0.125	0.250	0.50	1.0	2.0	4.0	5.6	8.0	16.0	32.0	45.0	64.0	90.0
North Fork Teton River at Site NF-E																
05-11-77	4 DS		--	--	--	--	--	1	2	2	5	26	78	98	100	
05-11-77	5 DS		--	1	1	6	15	21	27	30	35	52	90	100		
05-11-77	6 DS		--	1	2	6	10	19	26	30	34	50	82	94	100	
05-11-77	7 DS		--	1	2	10	14	19	24	28	32	45	75	88	100	
05-11-77	8 DS		--	1	1	1	2	2	2	2	2	18	71	97	100	
	Average		--	1	1	5	8	12	16	18	22	38	79	95	100	
North Fork Teton River at Site NF-F (13055270)																
12-02-76	6 US	5	1	3	6	12	20	27	36	40	46	52	76	98	100	
04-15-77	1 DS	2	--	--	1	3	6	10	18	22	28	48	88	94	100	
04-15-77	4 DS	2	--	1	2	8	15	22	30	36	42	62	88	97	100	
12-07-77	7 US	3	--	--	1	4	9	13	18	20	23	35	66	83	96	100
12-07-77	1 DS	2	--	--	1	2	5	8	14	16	21	38	75	90	97	100
	Average		--	1	2	6	11	16	23	27	32	47	79	92	99	100
North Fork Teton River at Site NF-G (13055300)																
04-14-77	3 DS	1	1	2	5	26	57	64	71	73	76	84	97	100		
04-14-77	4 DS	1	--	1	3	10	18	24	30	33	37	54	86	97	100	
04-14-77	5 DS	1	--	--	2	8	16	22	31	36	44	64	90	100		
	Average		--	1	3	15	30	37	44	47	52	67	91	99	100	

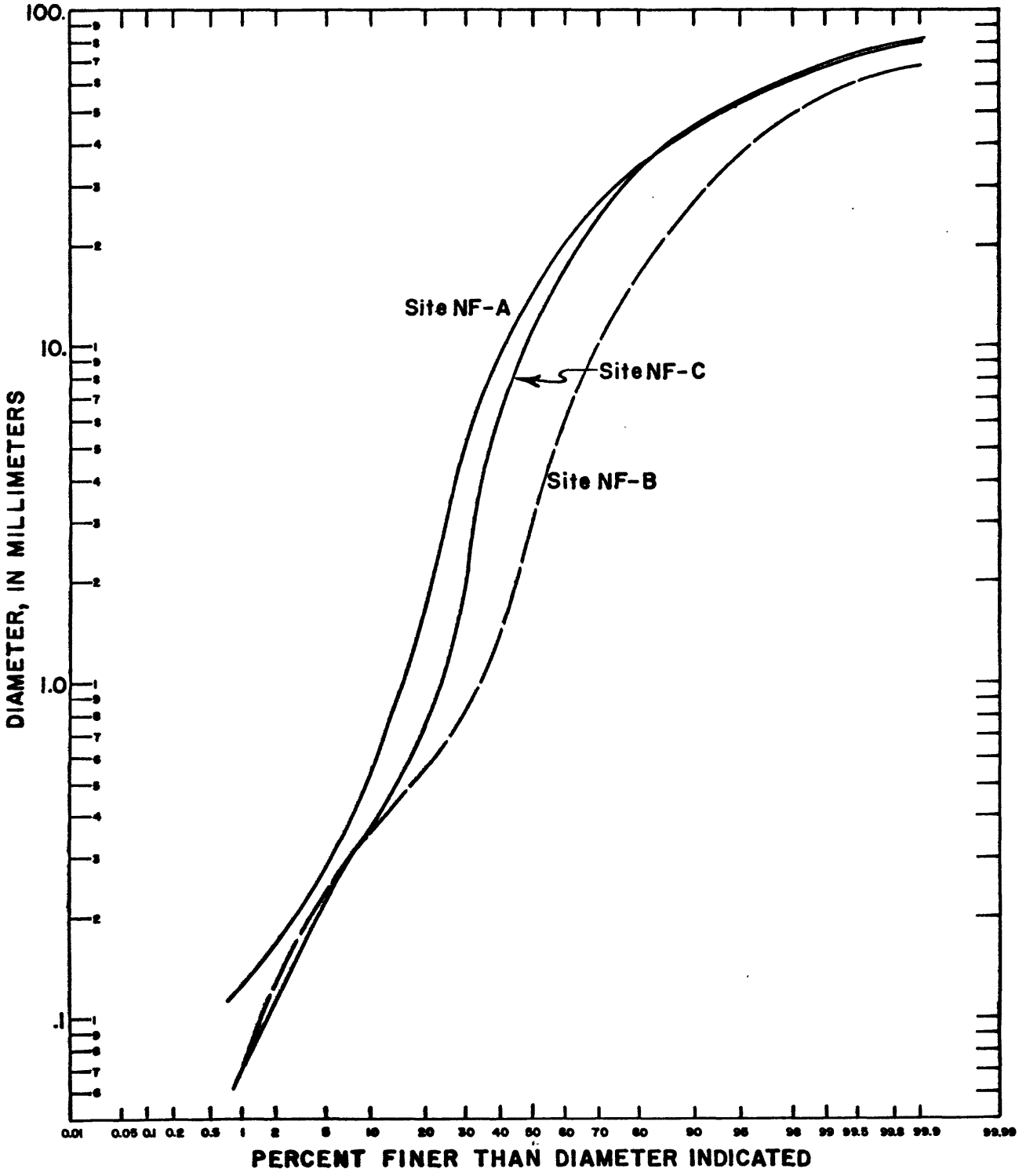


Figure 5. Average particle-size distribution of bed material.

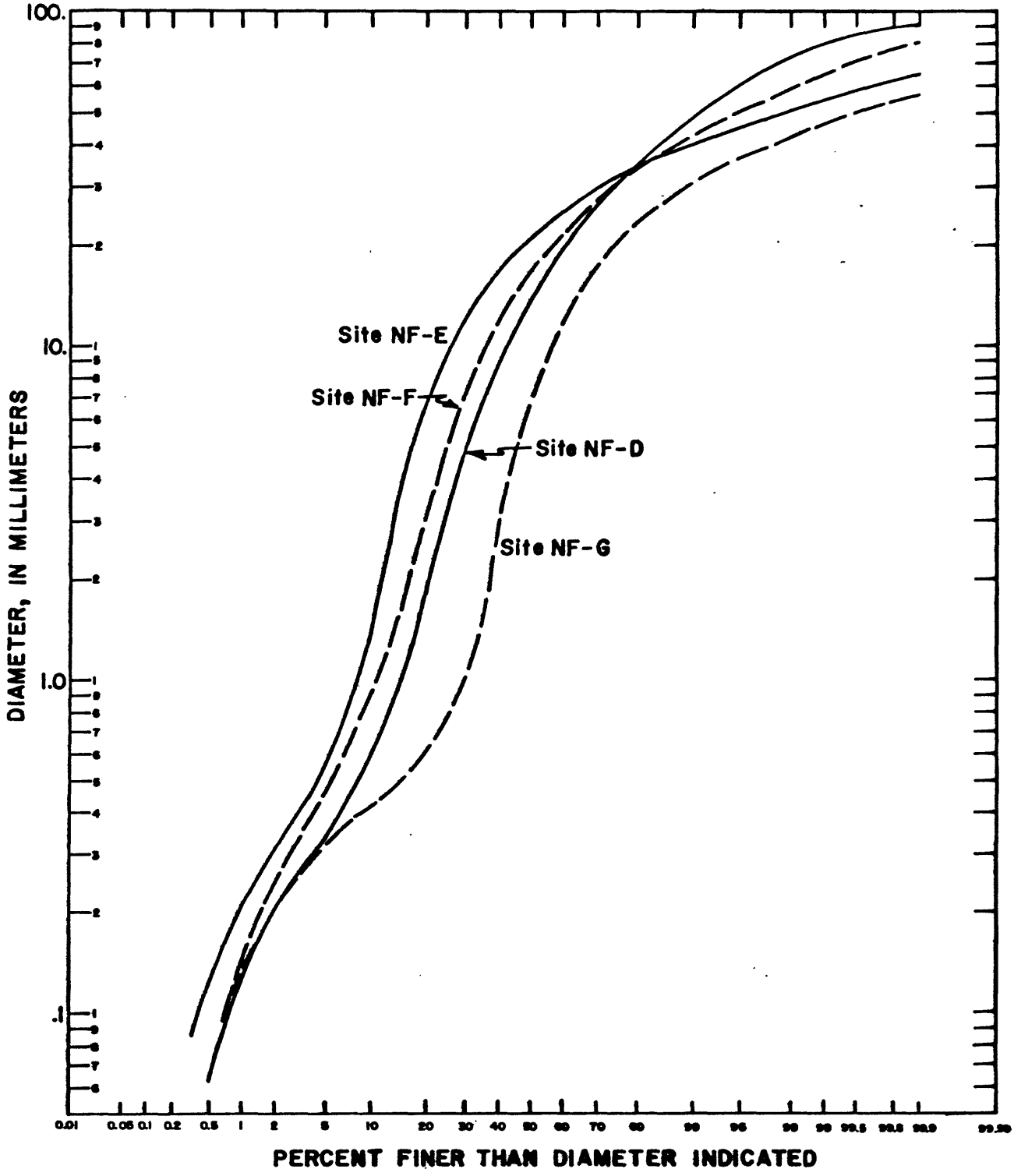


Figure 5. Average particle-size distribution of bed material (Continued).

Table 7. Summary of water and sediment discharge, April 1, 1977, to September 30, 1978

Month	Water discharge (ft^3/s)	Suspended-sediment discharge (tons)	Bedload discharge (tons)	Total sediment discharge (tons)
North Fork Teton River at Teton Island Bridge, Site NF-A (13055198)				
April	7,451.00	1,571.40	46	1,620
May	8,939.00	619.30	71	690
June	11,538.00	1,266.80	268	1,540
July	8,701.00	229.90	52	282
August	6,984.00	124.00	16	140
September	5,559.00	86.90	6	93
Subtotal	49,172.00	3,898.30	459	4,365
October	6,292.00	59.33	11	70
November	4,340.00	62.39	5	67
December	3,787.00	135.24	1	136
January 1978	3,318.00	52.46	1	53
February	2,470.00	27.45	0	27
March	4,568.00	742.90	22	765
April	9,173.00	1,223.00	146	1,370
May	20,911.00	3,334.10	888	4,220
June	28,153.00	3,222.00	354	3,580
July	19,917.00	670.00	473	1,140
August	9,116.00	137.60	63	201
September	9,501.00	78.47	96	174
Subtotal	121,546.00	9,744.94	2,060	11,803
Total	170,710.00	13,643.24	2,519	16,168
North Fork Teton River at Site NF-B (13055210)				
April	4,369.00	1,084.50	258	1,340
May	2,857.00	144.87	121	266
June	2,321.00	397.52	124	522
July	1,328.40	38.54	44	83
August	3,876.00	60.01	142	202
September	2,998.00	58.80	85	144
Subtotal	17,749.40	1,784.24	774	2,557
October	3,747.00	30.72	143	174
November	2,851.00	52.21	82	134
December	1,240.00	30.61	8	39
January 1978	--	--	--	--
February	--	--	--	--
March[1]	650.00	167.00	74	241
April	7,502.00	872.70	659	1,530
May	15,565.00	2,287.10	2,690	4,980
June	15,465.00	2,265.00	2,760	5,030
July	5,088.50	175.33	488	663
August	1,767.90	24.93	54	79
September	2,238.00	19.47	30	49
Subtotal	56,114.40	5,925.07	6,988	12,919
Total[2]	73,863.80	7,709.31	7,762	15,476

Table 7. Summary of water and sediment discharge, April 1, 1977, to September 30, 1978 (Continued)

Month	Water discharge (ft^3/s)	Suspended-sediment discharge (tons)	Bedload discharge (tons)	Total sediment discharge (tons)
	North Fork Teton River at Site NF-C (13055230)			
April	4,369.00	1,011.00	161	1,170
May	2,850.00	162.13	89	251
June	2,482.00	418.13	92	510
July	1,392.40	41.29	36	77
August	3,687.00	75.27	104	179
September	2,903.00	66.43	71	137
Subtotal	17,683.40	1,774.25	553	2,324
October	3,747.00	54.87	110	165
November	2,851.00	42.51	68	111
December	1,240.00	37.94	11	49
January 1978	--	--	--	--
February	--	--	--	--
March[1]	640.00	210.00	35	245
April	7,445.00	911.60	355	1,270
May	14,905.00	2,276.90	973	3,250
June	14,130.00	3,482.00	925	4,410
July	5,203.50	276.39	255	531
August	1,767.90	26.62	45	72
September	2,238.00	16.43	35	51
Subtotal	54,167.40	7,335.26	2,812	10,154
Total[2]	71,850.80	9,109.51	3,365	12,478
	North Fork Teton River at Site NF-D (13055250)			
April	3,993.00	983.00	54	1,040
May	2,723.00	339.73	25	365
June	1,962.00	299.71	14	314
July	1,314.50	38.91	5	44
August	3,765.00	104.36	20	124
September	2,848.00	36.82	10	47
Subtotal	16,605.50	1,802.53	128	1,934
October	3,668.00	36.84	23	60
November	2,843.00	40.75	15	56
December	1,159.00	31.04	1	32
January 1978	--	--	--	--
February	--	--	--	--
March[1]	550.00	132.00	18	150
April	6,853.00	1,053.40	159	1,210
May	14,970.00	3,576.60	1,460	5,030
June	14,555.00	4,859.00	1,580	6,440
July	5,009.00	330.60	162	493
August	1,815.50	49.25	9	58
September	2,180.00	35.80	2	38
Subtotal	53,602.50	10,145.28	3,429	13,567
Total[2]	70,208.00	11,947.81	3,557	15,501

Table 7. Summary of water and sediment discharge, April 1, 1977, to September 30, 1978 (Continued)

Month	Water discharge (ft^3/s)	Suspended-sediment discharge (tons)	Bedload discharge (tons)	Total sediment discharge (tons)
	North Fork Teton River at Site NF-F (13055270)			
April	4,726.00	1,305.98	68	1,370
May	3,222.00	262.58	22	285
June	2,961.00	280.44	18	298
July	1,675.00	38.90	3	42
August	3,886.00	86.53	14	101
September	2,902.00	38.61	6	45
Subtotal	19,372.00	2,013.04	131	2,141
October	3,897.00	63.61	19	83
November	2,797.00	69.12	9	78
December	1,191.00	32.26	0	32
January 1978	--	--	--	--
February	--	--	--	--
March[1]	850.00	277.00	65	342
April	7,735.00	1,406.50	205	1,610
May	15,320.00	5,914.10	1,920	7,840
June	14,780.00	5,612.00	1,980	7,590
July	6,448.00	570.21	233	803
August	3,555.00	75.58	29	105
September	4,220.00	65.40	20	85
Subtotal	60,793.00	14,085.78	4,480	18,568
Total[2]	80,165.00	16,098.82	4,611	20,709
	North Fork Teton River at Site NF-G (13055300)			
April	4,301.50	929.84	1	931
May	2,915.00	234.35	0	234
June	2,310.00	315.60	0	316
July	1,182.00	23.10	0	23
August	3,057.00	93.77	0	94
September	2,363.00	30.78	0	31
Subtotal	16,128.50	1,627.44	1	1,629
October	4,051.00	43.18	0	43
November	2,754.00	38.01	0	38
December	1,155.00	25.37	0	25
January 1978	--	--	--	--
February	--	--	--	--
March[1]	1,050.00	257.00	2	259
April	7,996.00	1,256.30	3	1,260
May	15,255.00	6,531.90	40	6,570
June	13,915.00	5,959.00	38	6,000
July	7,825.00	453.80	5	459
August	5,360.00	133.23	1	134
September	6,409.00	144.70	1	146
Subtotal	65,770.00	14,842.49	90	14,934
Total[2]	81,898.50	16,469.93	91	16,563

[1]Figure includes only March 30, 31
[2]Figure includes April 1, 1977-December 31, 1977, and March 30, 1978-September 30, 1978

CHANNEL SURVEYS

Changes in channel cross sections were documented by periodic surveys at the selected subreaches. Cross-sectional plots are illustrated in figure 6. Table 8 lists the area for each section at various water-surface elevations. The highest water-surface elevation for each section was selected to approximate bankfull stage. Table 9 indicates the net change in channel volume (for various survey dates) and comparable erosion or deposition rates. These rates are calculated as the average change in area per section, times reach length, times the representative measured unit weight of about 100 lb/ft^3 of bed material, divided by the number of days between surveys. Known man-caused channel changes occurred in the upper half of North Fork Teton River during the period preceding April 1977. These changes probably resulted from reworking of levee material prior to the spring runoff of 1977.

The change in the streambed elevation using data from several referenced sources and initial channel surveys (1976-77) is shown in figure 7. This profile shows that considerable scour dominated the entire reach below the damsite, except at the junction of North and South Fork Teton Rivers.

COMPARISON OF SURVEYED SUBREACHES AND MEASURED SEDIMENT DISCHARGES

Bedload data, as presented in this report, represent coarse material in transport at a given time and point. Instantaneous rates are expected to be sporadic, or at best, cyclic, as channel readjustments take place. However, in order to use bedload data to evaluate deposition and scour within the subreaches, it must be assumed that the bedload relations given are representative of a definite continuing trend. The surveyed data can then be compared to the measured data by converting rates at surveyed subreaches (table 9) to a common record length of about 460 (458) days (April 1, 1977, to December 31, 1977; March 30 to September 30, 1978). This record length represents major flow and sampled periods for 1977-78. Amounts of eroded or deposited sediment based upon the latest surveyed subreaches and the measured suspended, bedload, and total sediment loads at each site are summarized in table 10. Downstream from Teton Island canal (TIC), sediment load for the North Fork Teton River was adjusted for estimated suspended-sediment losses to the canal. Analysis of tonnage distribution from the latest surveyed data indicates that little scour or deposition occurred in the upper 7 miles of the North Fork, whereas considerable channel change occurred in the lower 10 miles. Minimal channel change in the upper subreaches of

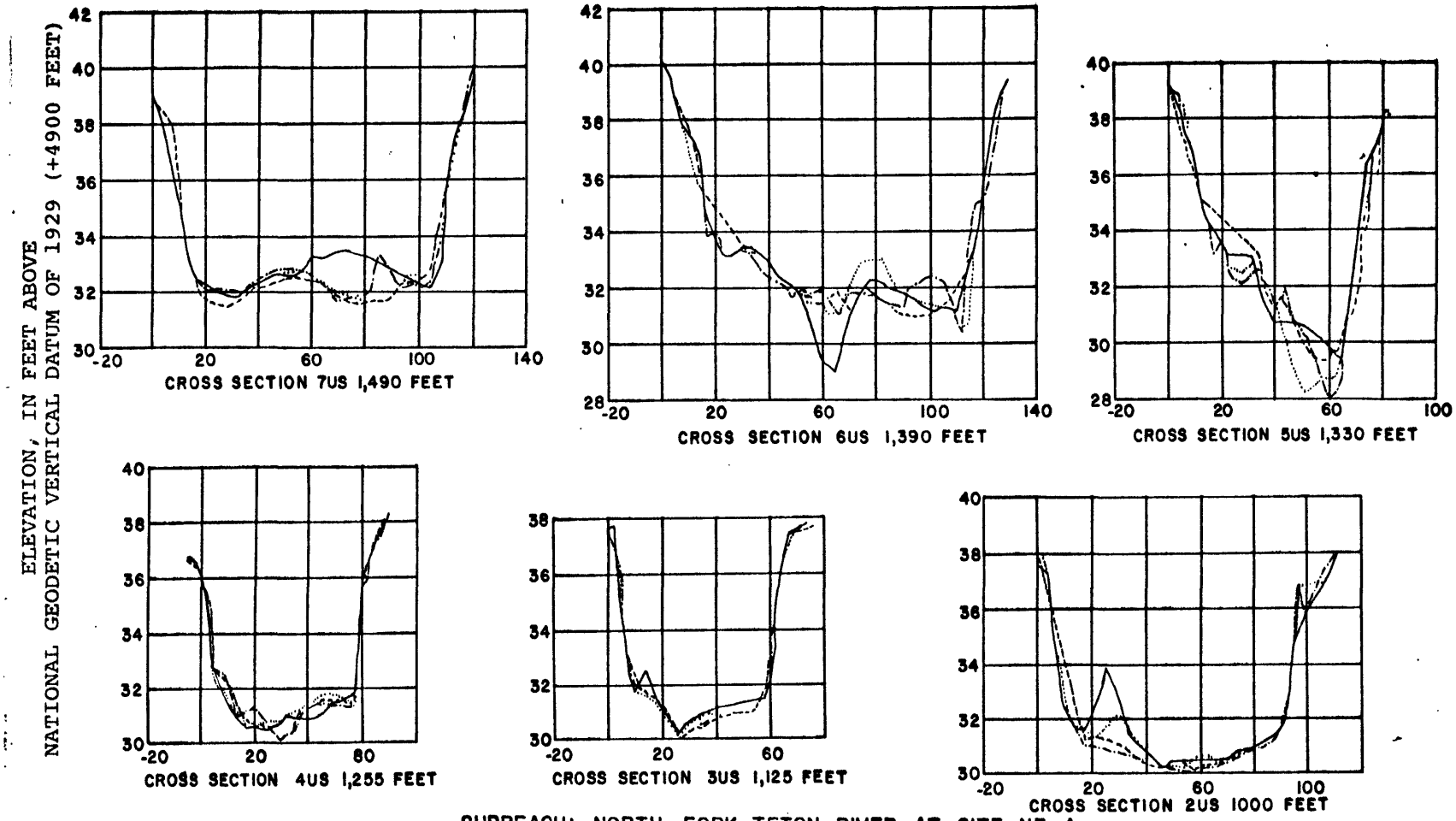
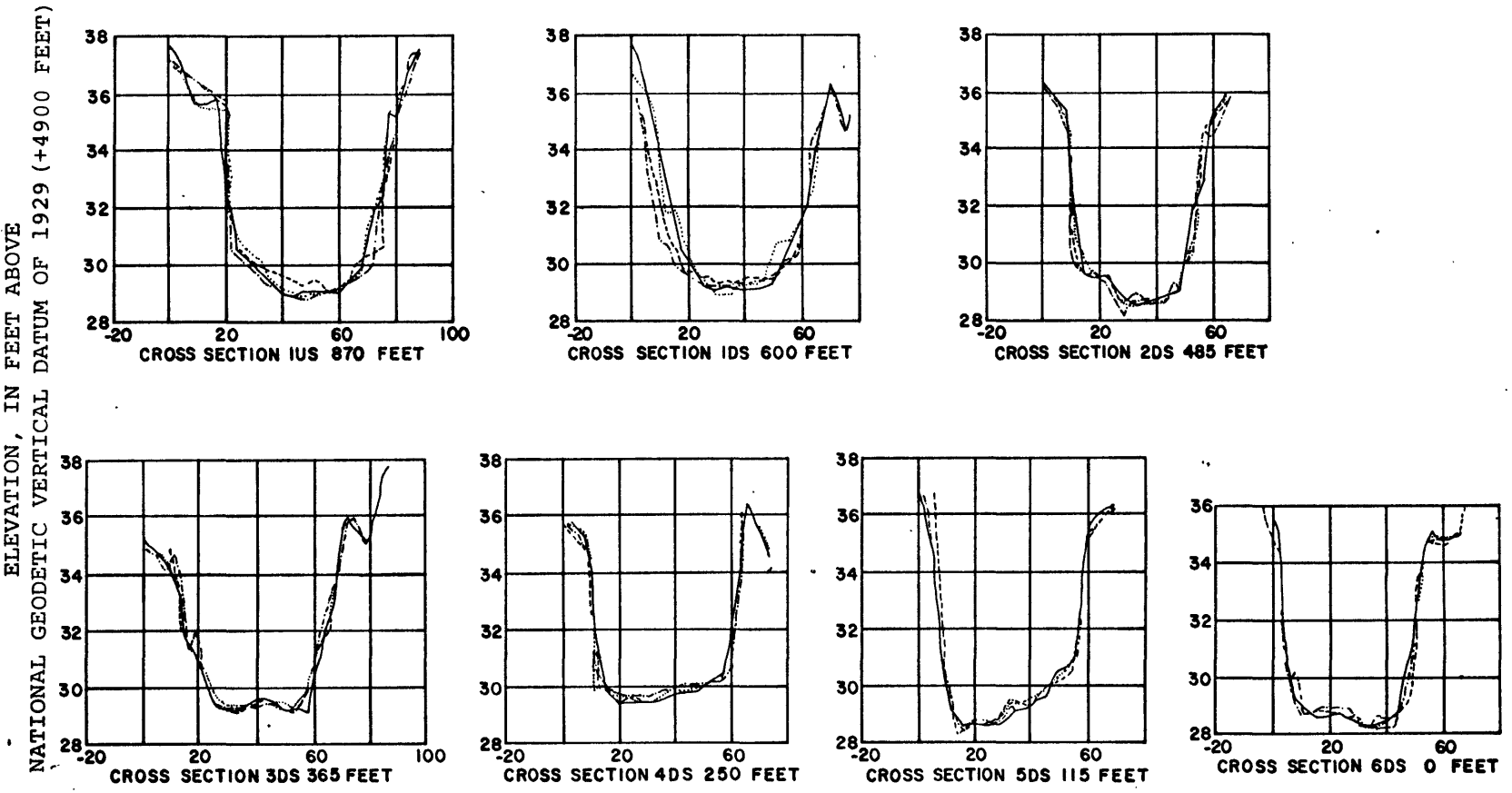


Figure 6. Changes in cross sections of the North Fork Teton River channel

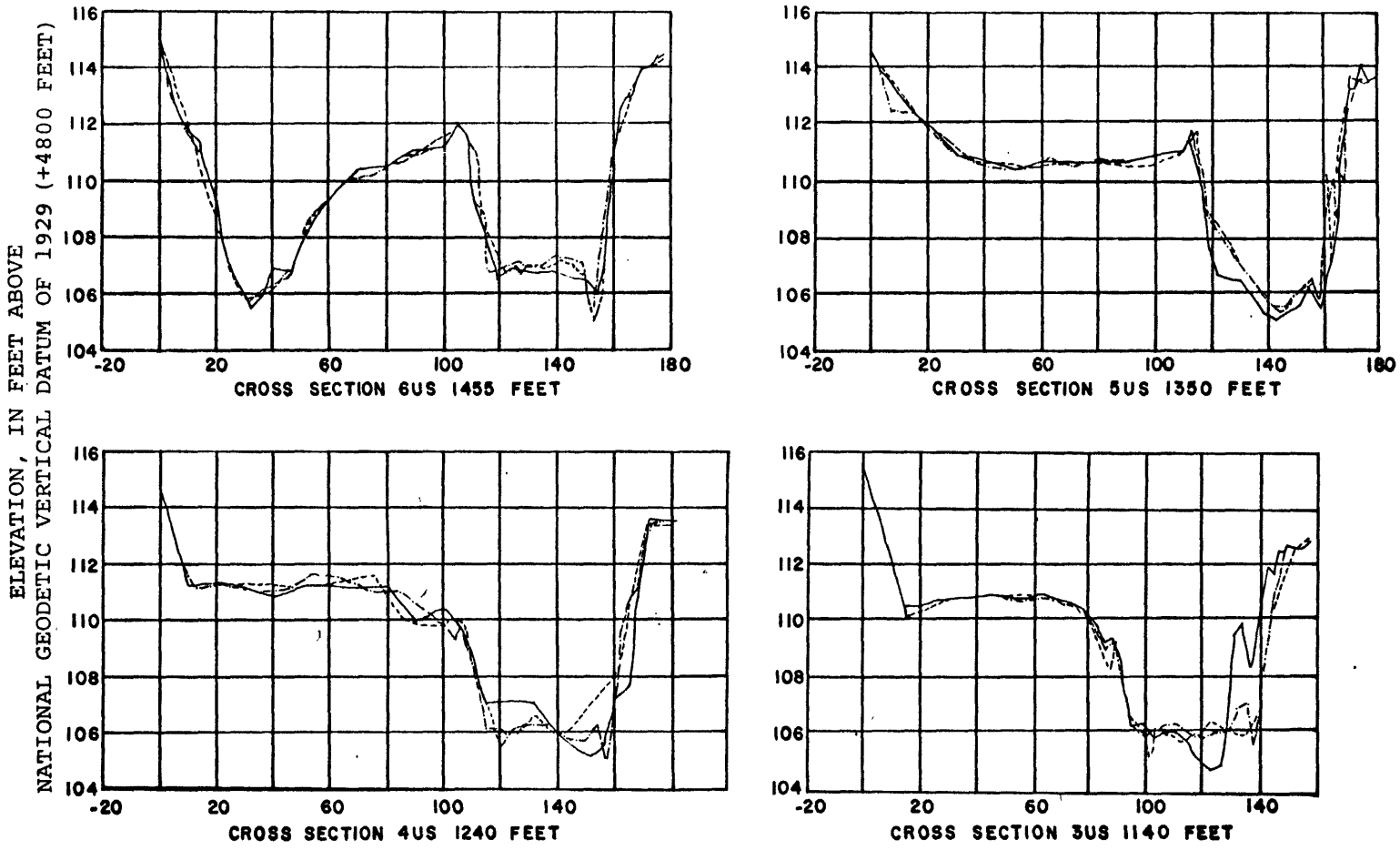


SUBREACH: NORTH FORK TETON RIVER AT SITE NF-A (CONTINUED)

Cross section number US (upstream) or DS (downstream) of bridge and distance in feet, reference to last section (DS).

Dates of surveys: —·— December 1976, — — — April 1977, ····· October 1977, —— September 1978

Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).

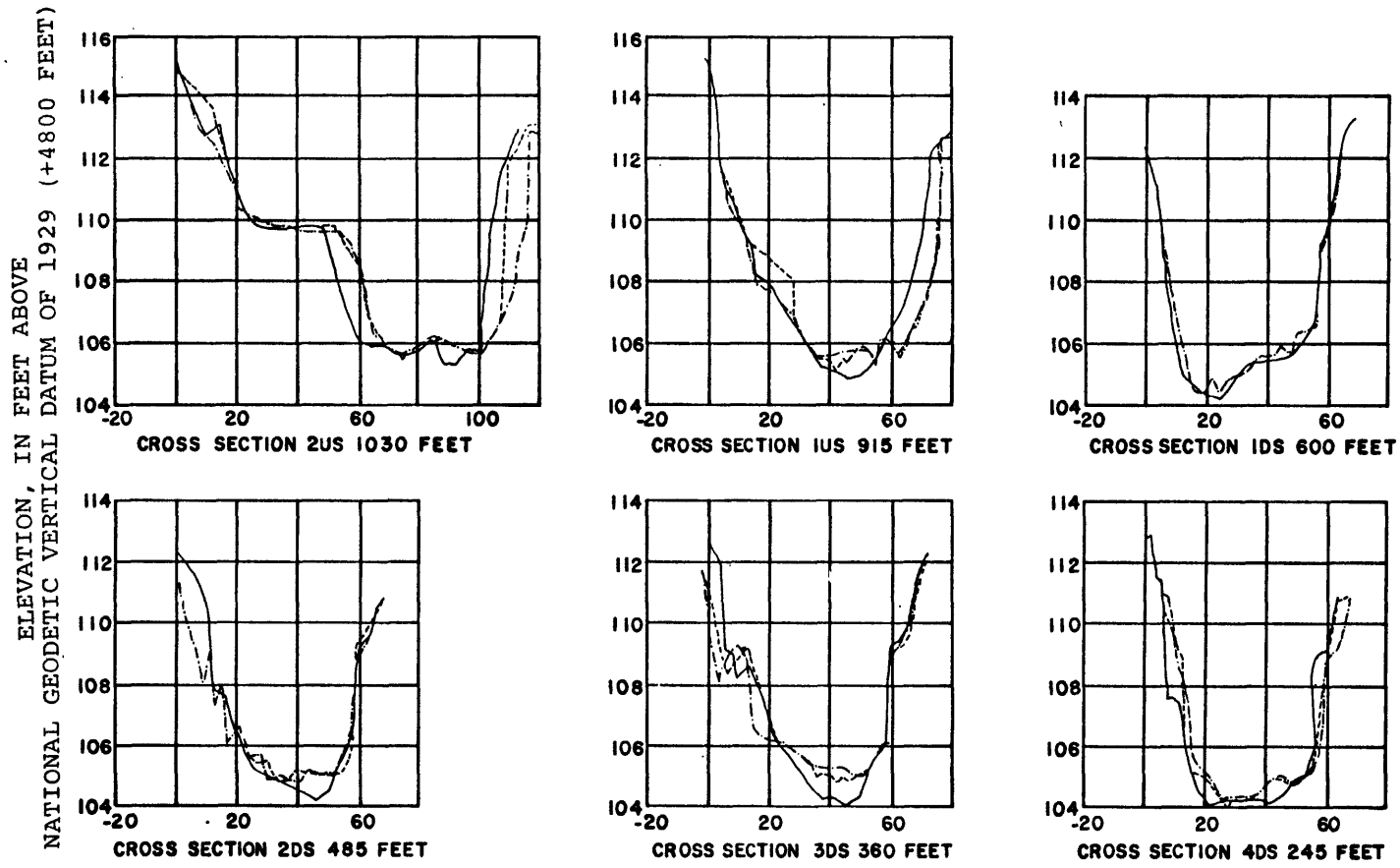


SUBREACH: NORTH FORK TETON RIVER AT SITE NF-C

Cross section number US (upstream) or DS (downstream) of bridge and distance in feet, reference to last section (DS).

Dates of surveys: —·— December 1976, — — — March 1977, ——— September 1978

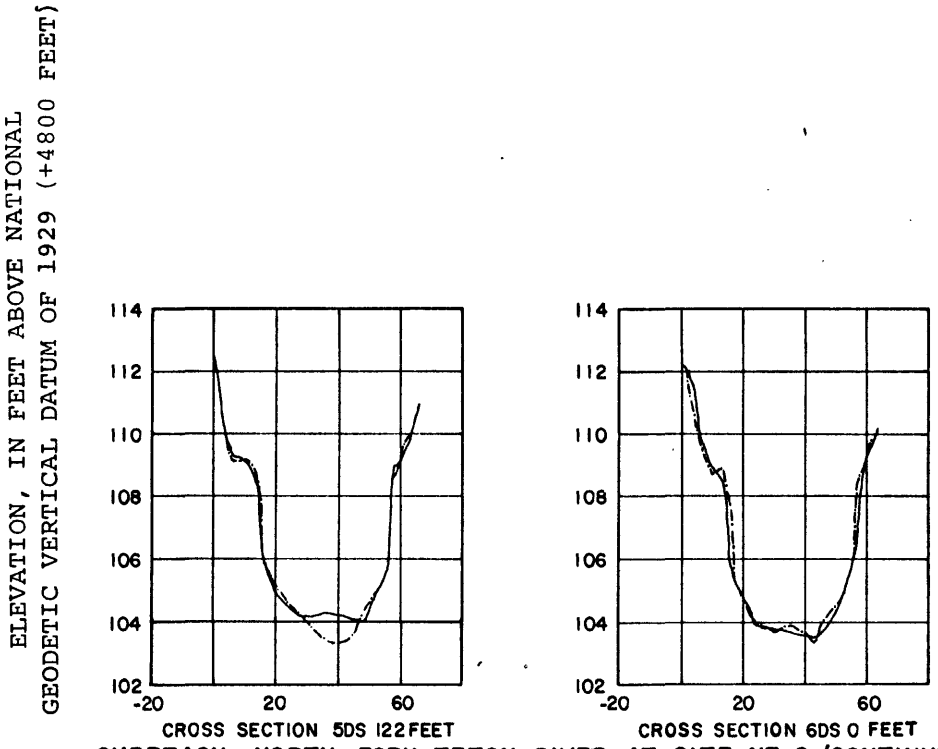
Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).



SUBREACH: NORTH FORK TETON RIVER AT SITE NF-C (CONTINUED)

Cross section number US (upstream) or DS (downstream) of bridge and distance in feet, reference to last section (DS).
Dates of surveys : —·— December 1976, — — — March 1977, —— September 1978

Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).



SUBREACH: NORTH FORK TETON RIVER AT SITE NF-C (CONTINUED)

Cross section number US (upstream) or DS (downstream) of bridge and distance in feet, reference to last section (DS).

Dates of surveys: —·— December 1976, — — — March 1977, ····· October 1977, ——— September 1978

Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).

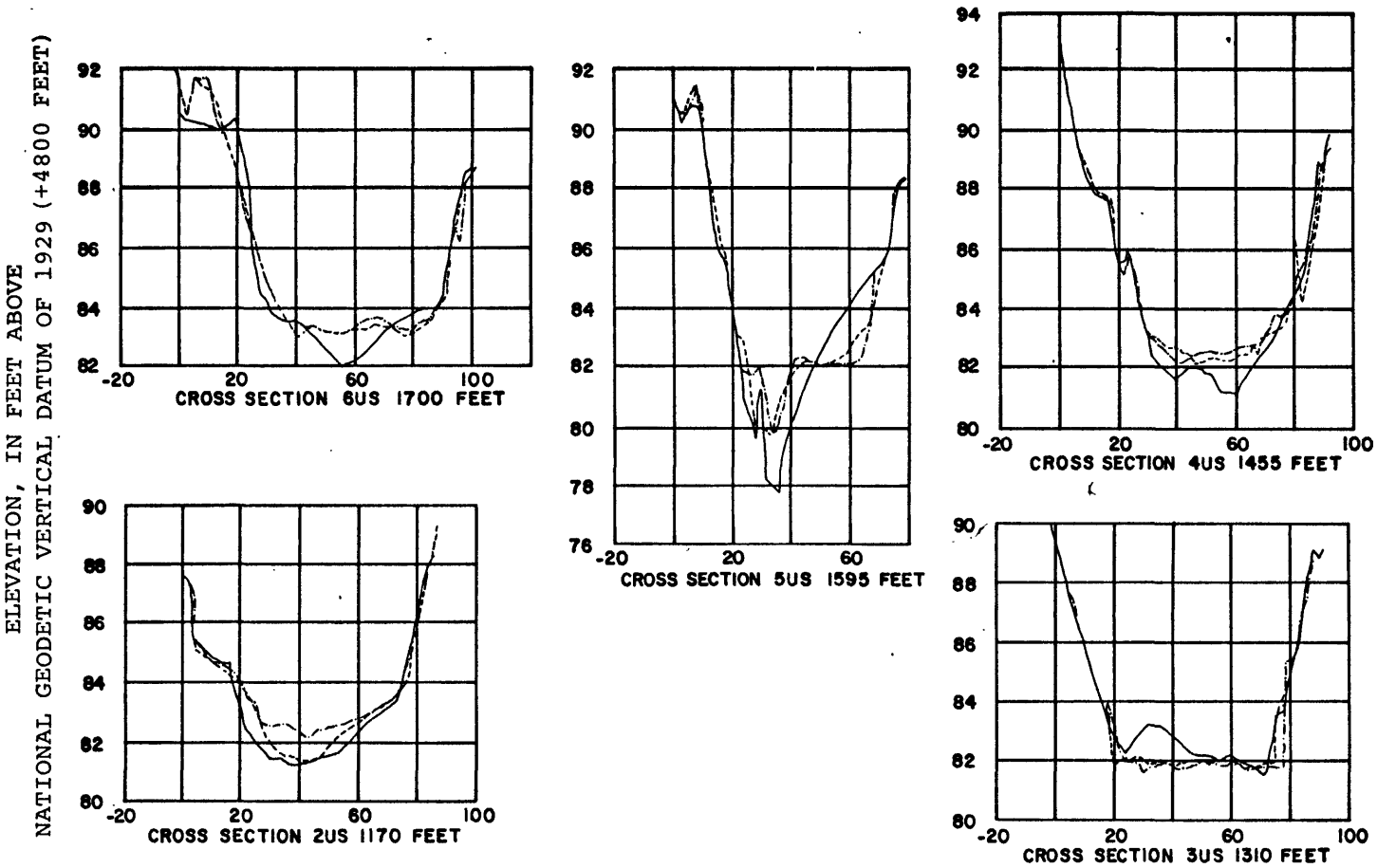
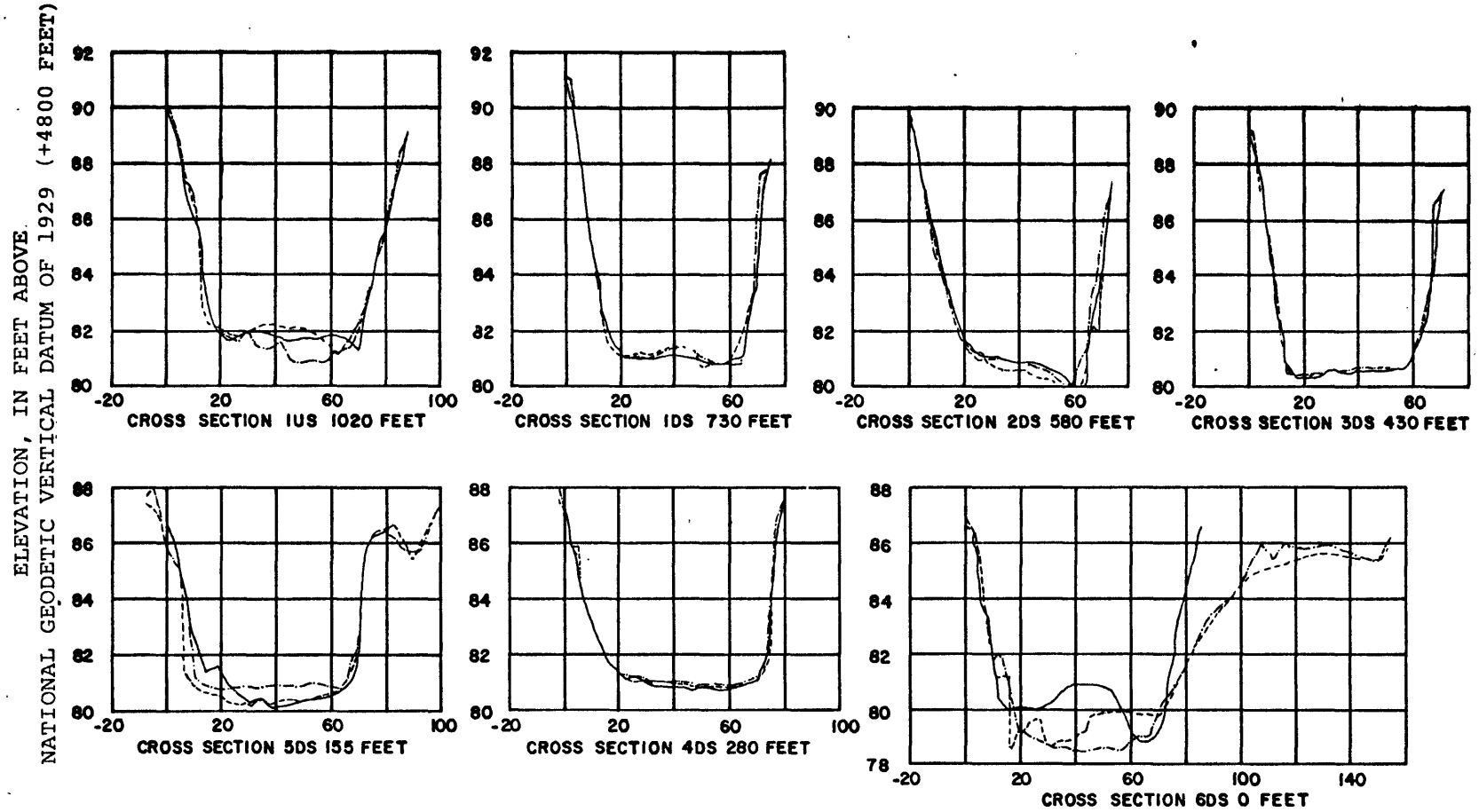


Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).



SUBREACH: NORTH FORK TETON RIVER AT SITE NF-D (CONTINUED)
Cross section number US (upstream) or DS (downstream) of bridge and distance in feet, reference to last section (DS).
Dates of surveys: —·— December 1976, – – – April 1977, —— September 1978

Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).

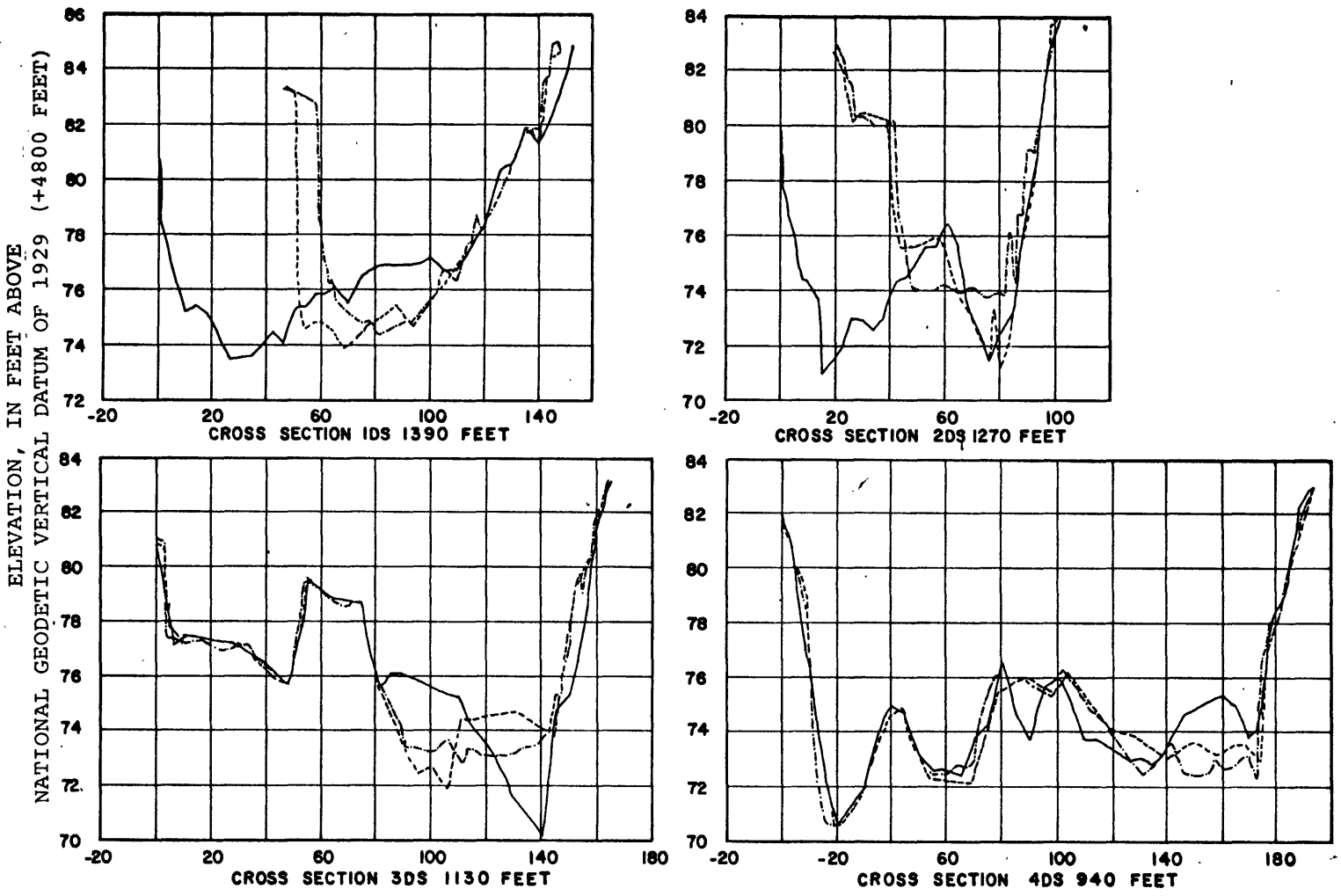


Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).

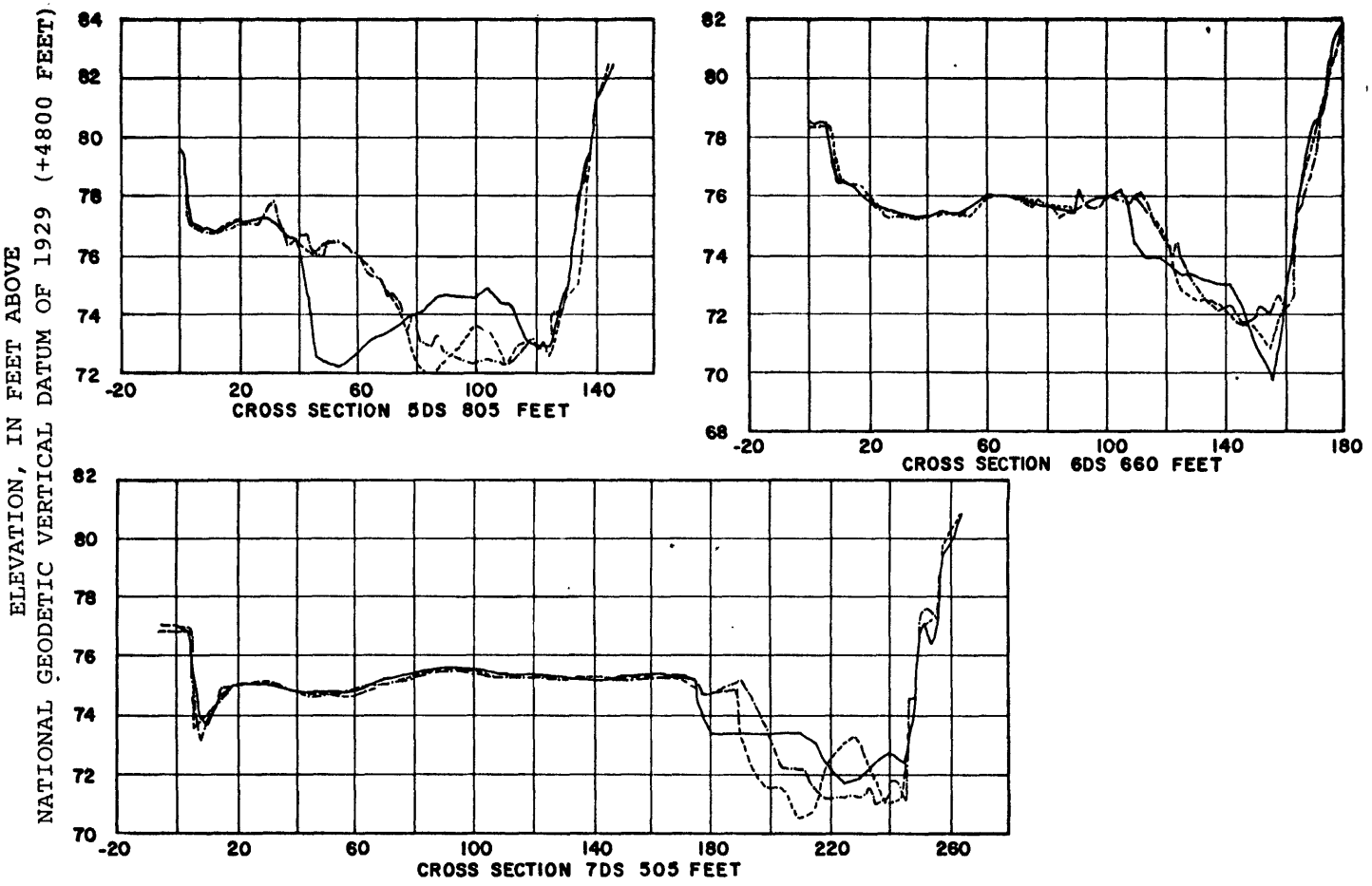


Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).

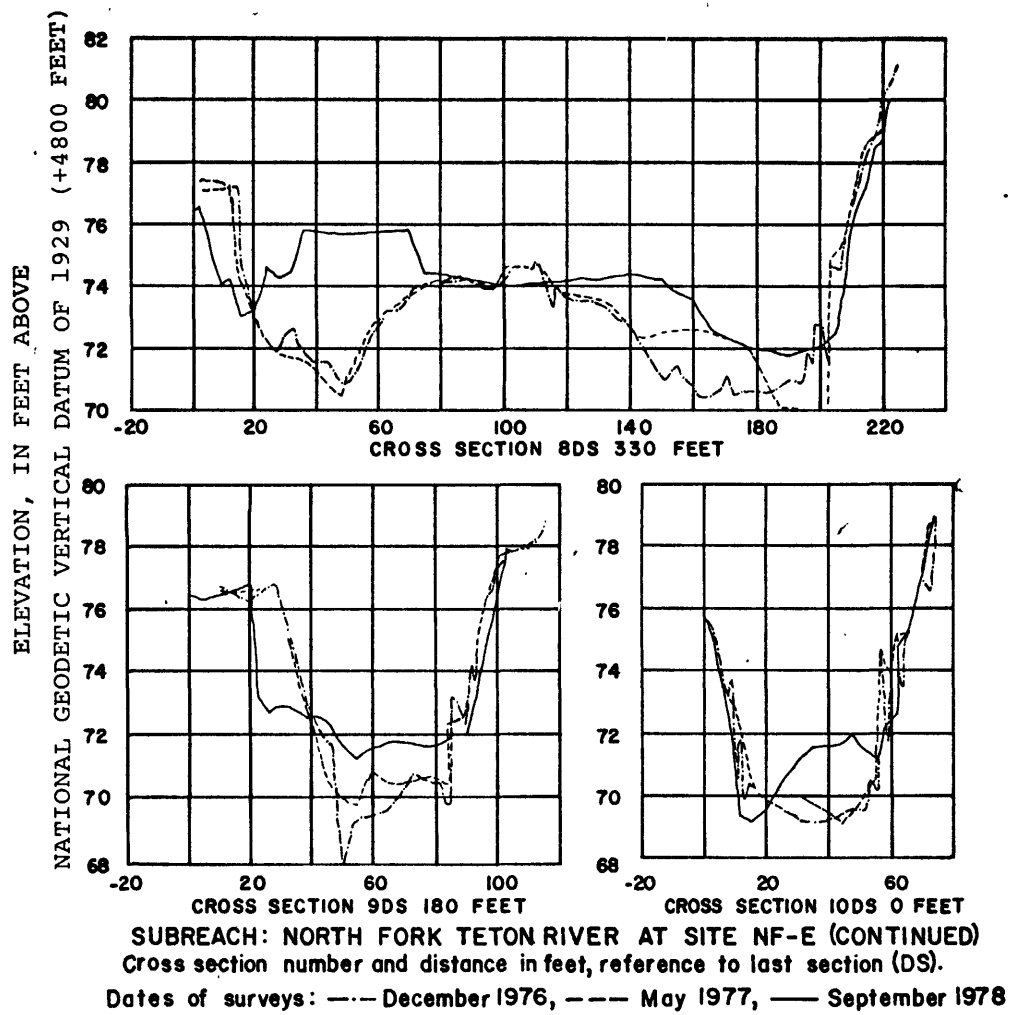


Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).

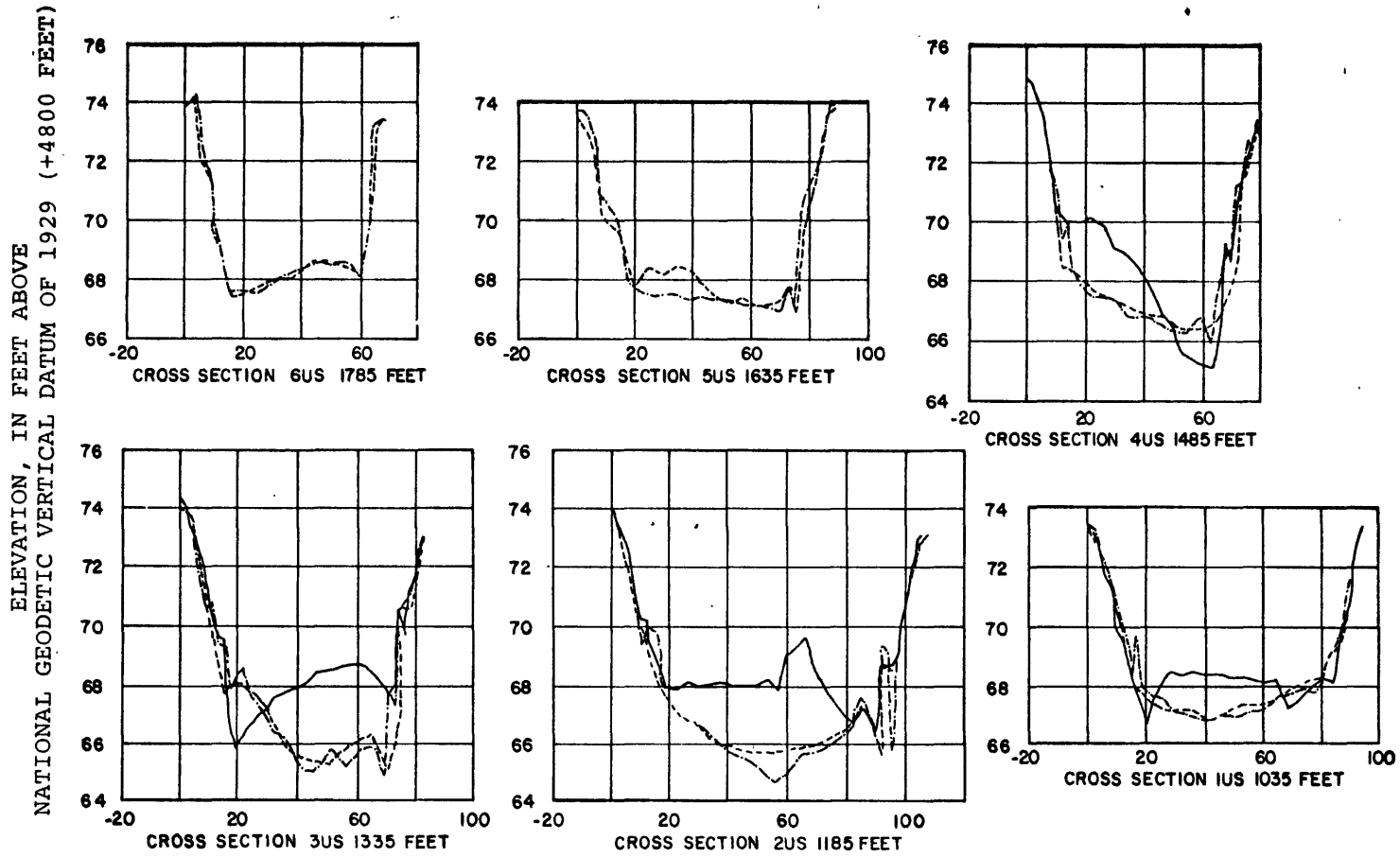
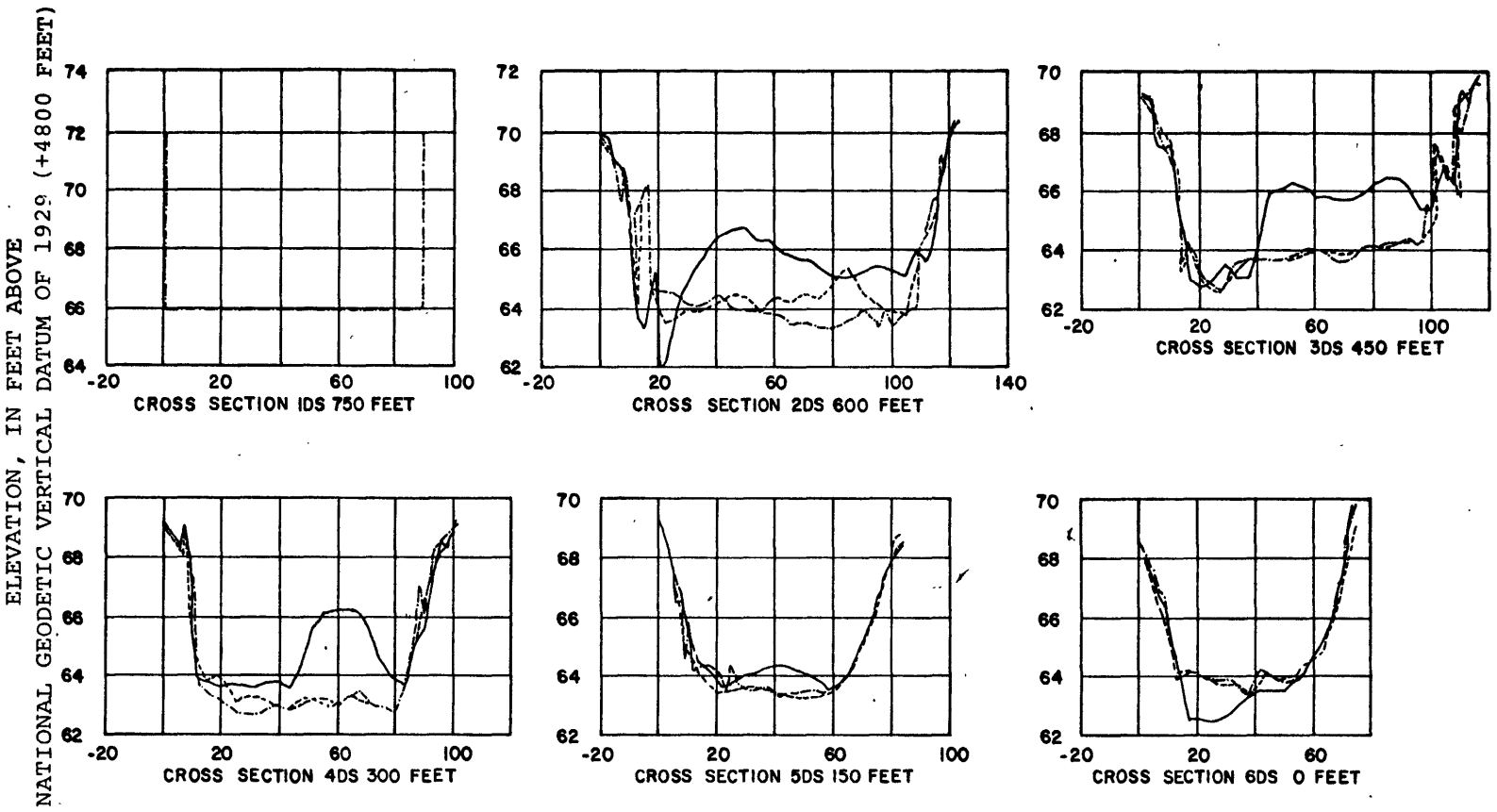


Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).



SUBREACH: NORTH FORK TETON RIVER AT SITE NF-F (CONTINUED)

Cross section number US (upstream) or DS (downstream) of bridge and distance in feet, reference to last section (DS).

Dates of surveys: —·— December 1976, ———— May 1977, ——September 1978

Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).

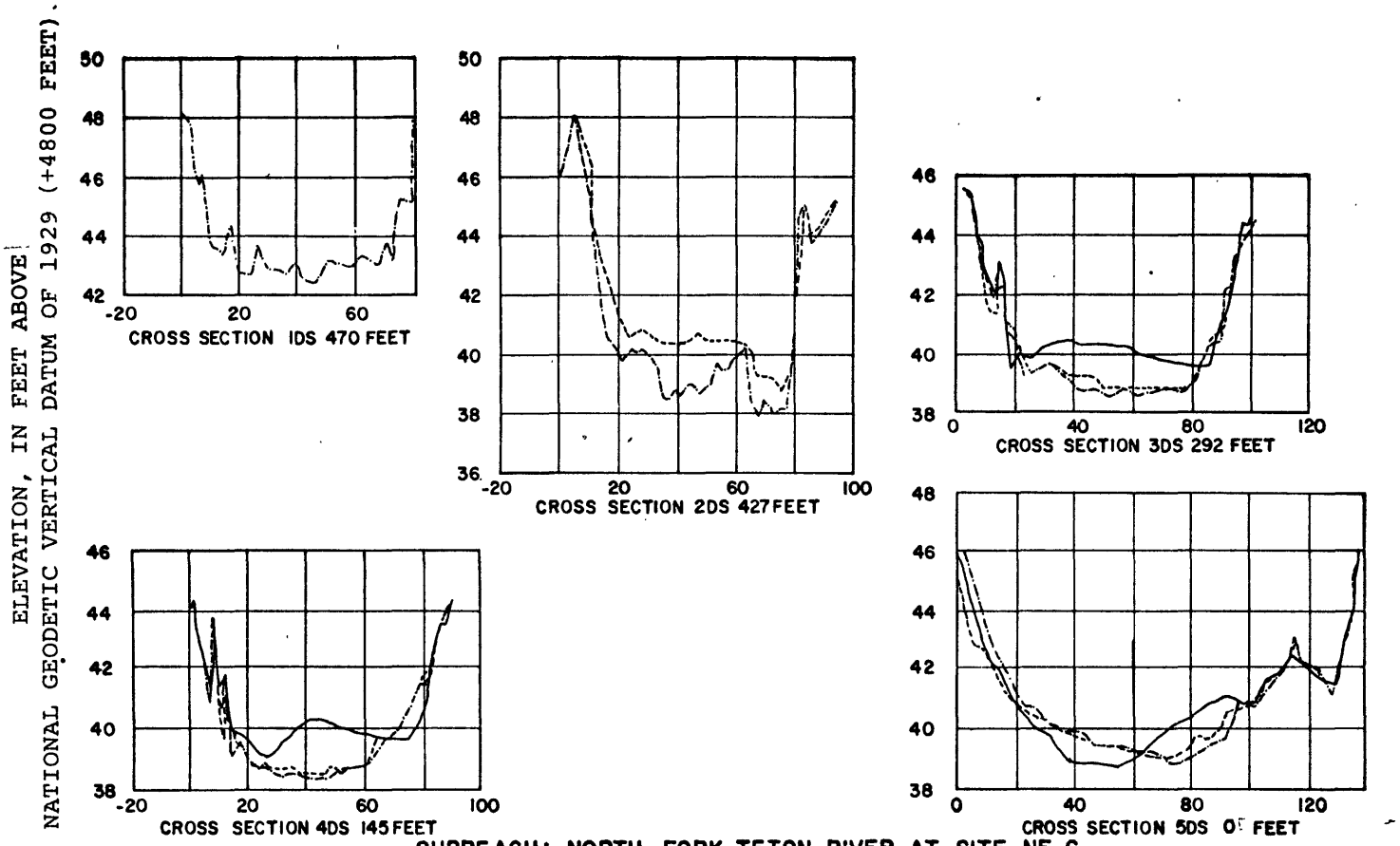


Figure 6. Changes in cross sections of the North Fork Teton River channel (Continued).

Table 8. Area, in square feet, of cross sections at various water-surface elevations

Water-surface elevation, ft above NGVD[1] (+4,900)	Cross sections surveyed												
	7 US	6 US	5 US	4 US	3 US	2 US	1 US	1 DS	2 DS	3 DS	4 DS	5 DS	6 DS
North Fork Teton River at Teton Island Bridge, Site NF-A (13055198)													
December 1976													
41.0	--	--	--	--	--	--	--	--	--	--	--	--	--
40.0	804	861	--	--	--	--	--	--	--	--	--	--	--
39.0	685	736	503	--	--	--	--	--	--	--	--	--	--
38.0	571	615	425	397	403	654	--	--	--	--	--	--	--
37.0	461	499	352	324	335	549	437	450	390	395	395	393	--
36.0	356	390	283	259	273	453	362	365	323	377	327	330	360
35.0	256	285	220	201	215	365	300	295	263	266	262	273	297
34.0	158	184	160	147	159	277	242	234	213	204	206	221	242
33.0	65	94	106	93	104	191	186	176	168	151	154	171	192
32.0	4	25	62	43	52	108	132	120	123	103	103	121	145
31.0	--	1	34	7	12	34	80	68	79	58	53	74	99
30.0	--	--	18	--	--	--	31	22	37	20	7	31	55
29.0	--	--	7	--	--	--	1	--	7	--	--	6	15
April 1977													
41.0	--	--	--	--	--	--	--	--	--	--	--	--	--
40.0	--	--	--	--	--	--	--	--	--	--	--	--	--
39.0	698	738	465	--	--	--	--	--	--	538	--	--	--
38.0	585	619	387	395	--	--	--	--	--	468	--	--	--
37.0	479	507	314	322	332	529	424	--	--	401	--	--	--
36.0	377	399	246	257	270	431	347	349	315	336	324	339	363
35.0	278	294	182	201	212	341	285	282	257	274	263	281	294
34.0	182	197	128	147	156	255	227	221	209	215	208	227	240
33.0	89	110	86	94	102	173	170	163	163	159	155	174	192
32.0	15	35	51	44	52	95	116	109	118	106	104	123	144
31.0	--	1	23	10	13	27	63	60	74	62	57	74	97
30.0	--	--	6	--	--	--	17	17	33	23	13	34	53
29.0	--	--	--	--	--	--	--	--	4	--	--	6	14
28.0	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 8. Area, in square feet, of cross sections at various water-surface elevations (Continued)

Water-surface elevation, ft above NGVD[1] (+4,900)	Cross sections surveyed												
	7 US	6 US	5 US	4 US	3 US	2 US	1 US	1 DS	2 DS	3 DS	4 DS	5 DS	6 DS
North Fork Teton River at Teton Island Bridge, Site NF-A (13055198) - Continued													
October 1977													
41.0	--	--	--	--	--	--	--	--	--	--	--	--	--
40.0	--	--	--	--	--	--	--	--	--	--	--	--	--
39.0	705	738	504	--	--	--	--	--	--	--	--	--	--
38.0	585	618	426	395	405	625	--	--	--	--	--	--	--
37.0	472	502	356	324	336	519	423	403	--	--	--	403	--
36.0	366	390	290	259	274	426	343	327	308	336	330	335	360
35.0	264	282	227	201	215	336	278	261	252	267	266	277	291
34.0	167	180	169	145	158	248	222	203	204	205	211	223	238
33.0	73	91	116	91	103	164	167	148	159	150	158	170	189
32.0	6	30	78	38	52	82	115	96	114	99	107	120	141
31.0	--	1	49	4	10	22	67	52	71	53	57	72	96
30.0	--	--	25	--	--	--	27	20	33	17	11	31	54
29.0	--	--	6	--	--	--	0	1	6	--	--	5	15
28.0	--	--	--	--	--	--	--	--	--	--	--	--	--
September 1978													
41.0	--	--	--	--	--	--	--	--	--	--	--	--	--
40.0	777	888	--	--	--	--	--	--	--	--	564	--	--
39.0	657	762	473	--	--	--	--	--	--	--	494	--	--
38.0	542	643	394	397	395	619	436	480	--	520	425	--	--
37.0	433	529	322	331	330	512	358	405	--	435	357	406	--
36.0	329	421	257	269	268	413	293	333	309	353	291	340	--
35.0	228	316	196	211	209	320	234	267	254	279	232	283	--
34.0	130	214	138	155	151	232	177	209	204	217	181	228	--
33.0	42	122	88	100	95	149	122	155	156	161	135	176	--
32.0	1	53	52	48	43	76	72	105	111	109	91	126	--
31.0	--	18	20	8	7	20	29	61	71	63	50	77	--
30.0	--	6	2	--	--	--	0	24	33	23	13	36	--
29.0	--	--	--	--	--	--	--	--	4	--	--	6	--

Table 8. Area, in square feet, of cross sections at various water-surface elevations (Continued)

Water-surface elevation, ft above NGVD[1] (+4,800)	Cross sections surveyed											
	6 US	5 US	4 US	3 US	2 US	1 US	1 DS	2 DS	3 DS	4 DS	5 DS	6 DS
North Fork Teton River at Site NF-C (13055230)												
December 1976												
115	1,009	--	937	854	753	618	--	--	--	--	--	--
114	834	680	757	698	633	530	--	--	--	--	--	--
113	669	509	583	545	516	444	414	--	--	--	--	--
112	511	351	419	403	410	367	348	--	363	--	375	371
111	367	210	276	267	311	295	286	280	291	288	312	310
110	252	141	202	187	216	226	228	216	222	230	251	250
109	162	95	145	128	148	161	174	159	159	177	196	196
108	88	56	94	77	96	101	124	110	108	131	151	151
107	25	25	46	30	47	51	76	66	63	88	109	110
106	3	3	5	0	6	12	33	28	20	48	69	71
105	--	--	0	--	--	--	6	1	--	11	32	34
104	--	--	--	--	--	--	--	--	--	--	8	6
March 1977												
115	1,001	--	915	862	703	597	--	--	--	--	--	--
114	820	664	736	706	586	510	--	--	--	--	--	--
113	658	498	560	554	476	425	--	--	--	--	--	--
112	501	347	401	410	378	348	--	--	354	--	--	--
111	361	210	263	274	287	277	--	281	283	298	--	--
110	250	141	181	194	200	210	--	216	215	241	--	--
109	160	95	122	134	140	146	--	161	154	189	--	--
108	84	56	72	83	92	94	--	112	105	143	--	--
107	24	24	29	35	46	50	--	68	64	97	--	--
106	2	3	2	2	8	13	--	30	26	54	--	--
105	--	--	--	--	--	--	--	1	2	13	--	--
104	--	--	--	--	--	--	--	--	--	--	--	--
September 1978												
115	1,010	880	939	818	699	564	--	--	--	--	--	--
114	837	701	760	663	589	487	--	--	--	--	--	--
113	672	535	588	511	482	411	422	--	429	434	--	--
112	516	382	423	370	386	339	357	338	356	373	369	375
111	375	242	276	239	297	271	296	276	291	314	304	315
110	264	176	196	168	213	207	239	219	229	257	242	256
109	173	128	136	118	153	149	186	168	171	203	187	203
108	96	82	81	77	101	96	135	120	122	153	143	157
107	30	39	32	40	54	53	86	77	80	106	101	114
106	2	9	9	10	12	21	41	39	43	63	60	73
105	--	--	--	0	--	1	10	10	15	23	22	36
104	--	--	--	--	--	--	--	--	--	--	0	6

Table 8. Area, in square feet, of cross sections at various water-surface elevations (Continued)

Water-surface elevation, ft above NGVD[1] (+4,800)	Cross sections surveyed											
	6 US	5 US	4 US	3 US	2 US	1 US	1 DS	2 DS	3 DS	4 DS	5 DS	6 DS
North Fork Teton River at Site NF-D (13055250)												
December 1976												
93.0	--	--	--	--	--	--	--	--	--	--	--	--
92.0	659	--	652	--	--	--	--	--	--	--	--	--
91.0	562	535	563	--	--	--	620	--	--	--	--	--
90.0	473	463	474	--	--	599	546	561	--	--	--	--
89.0	387	393	390	504	449	512	474	488	499	--	--	--
88.0	307	326	310	419	363	431	403	417	430	478	520	--
87.0	232	265	238	338	282	355	337	348	364	399	418	709
86.0	161	205	171	261	204	284	274	282	298	323	325	555
85.0	96	151	110	192	130	215	214	219	237	251	252	443
84.0	37	102	58	127	66	151	156	160	177	182	186	348
83.0	--	55	15	66	18	83	99	106	120	116	123	264
82.0	--	16	--	10	--	33	46	55	67	53	62	188
81.0	--	--	--	--	--	2	2	11	18	2	6	122
80.0	--	--	--	--	--	--	--	--	--	--	--	65
79.0	--	--	--	--	--	--	--	--	--	--	--	14
April 1977												
92.0	656	--	658	--	--	--	--	--	--	--	--	--
91.0	558	535	568	686	--	--	623	--	--	--	--	--
90.0	471	463	481	592	--	576	549	582	--	--	--	--
89.0	386	393	397	501	--	489	476	508	497	--	--	--
88.0	307	327	317	415	414	407	405	437	428	485	--	--
87.0	234	266	246	334	328	330	338	368	362	405	448	--
86.0	164	206	178	257	244	258	273	301	297	328	357	549
85.0	99	153	116	186	163	189	212	239	235	257	285	417
84.0	40	103	63	121	93	125	153	179	176	188	219	322
83.0	--	58	18	62	41	64	95	122	119	121	153	237
82.0	--	24	--	6	11	10	43	69	67	59	90	160
81.0	--	--	--	--	--	--	3	25	19	4	30	91
80.0	--	--	--	--	--	--	--	--	--	--	--	32
79.0	--	--	--	--	--	--	--	--	--	--	--	3
September 1978												
93.0	--	--	773	--	--	--	--	--	--	--	--	--
92.0	--	--	682	--	--	--	--	--	--	--	--	--
91.0	571	539	593	--	--	--	628	--	--	--	--	--
90.0	474	467	505	--	--	582	554	562	--	--	--	--
89.0	395	399	420	476	--	496	482	489	499	--	--	--
88.0	320	333	341	390	406	415	411	418	430	--	--	--
87.0	248	270	272	309	324	337	344	348	363	--	408	497
86.0	179	211	205	233	247	263	280	282	300	331	332	415
85.0	112	158	145	161	173	195	218	220	239	259	263	336
84.0	51	115	92	95	111	132	159	161	180	189	198	260
83.0	13	81	46	36	56	71	102	106	123	122	135	189
82.0	--	53	--	2	16	15	49	56	70	60	76	121
81.0	--	31	--	--	--	--	2	13	21	8	24	56
80.0	--	15	--	--	--	--	--	--	--	--	--	13
79.0	--	6	--	--	--	--	--	--	--	--	--	1

Table 8. Area, in square feet, of cross sections at various water-surface elevations (Continued)

Water-surface elevation, ft above NGVD[1] (+4,800)	Cross sections surveyed									
	1 DS	2 DS	3 DS	4 DS	5 DS	6 DS	7 DS	8 DS	9 DS	10 DS
				North Fork Teton River at Site NF-E						
				December 1977						
85.0	689	--	--	--	--	--	--	--	--	--
84.0	590	566	--	--	--	--	--	--	--	--
83.0	495	477	1,108	1,647	--	--	--	--	--	--
82.0	411	401	945	1,456	953	1,205	--	--	--	--
81.0	334	329	785	1,268	812	1,027	1,695	1,718	--	--
80.0	263	264	630	1,086	672	851	1,427	1,499	--	--
79.0	195	212	482	908	535	676	1,163	1,283	587	555
78.0	135	165	354	735	402	507	--	--	--	480
77.0	82	119	238	567	275	345	--	--	--	406
76.0	38	76	157	403	184	190	397	667	309	335
75.0	6	36	92	266	166	106	183	475	246	270
74.0	--	2	36	150	60	62	113	296	187	211
73.0	--	--	--	56	15	26	64	168	133	159
72.0	--	--	--	16	--	1	22	74	87	111
71.0	--	--	--	--	--	--	--	13	47	65
70.0	--	--	--	--	--	--	--	--	16	23
69.0	--	--	--	--	--	--	--	--	3	--
				May 1977						
85.0	778	--	--	--	1,356	--	--	--	--	--
84.0	679	589	--	--	1,212	--	--	--	--	--
83.0	582	509	1,085	1,626	1,070	--	--	--	--	--
82.0	490	432	923	1,435	929	--	--	--	--	--
81.0	405	359	762	1,246	794	1,028	1,713	--	--	--
80.0	326	294	607	1,063	661	852	1,445	1,454	--	--
79.0	251	239	459	886	530	678	1,182	1,236	567	522
78.0	181	186	332	713	400	510	920	1,023	460	451
77.0	117	136	221	543	275	350	659	815	367	380
76.0	61	88	139	377	185	197	411	619	292	311
75.0	15	55	73	236	120	117	202	431	229	245
74.0	--	31	28	119	62	74	123	264	171	189
73.0	--	13	8	42	15	36	66	144	117	139
72.0	--	--	--	12	--	9	25	62	69	93
71.0	--	--	--	--	--	--	3	22	26	51
70.0	--	--	--	--	--	--	--	1	1	11
69.0	--	--	--	--	--	--	--	--	--	--

Table 8. Area, in square feet, of cross sections at various water-surface elevations (Continued)

Water-surface elevation, ft above NGVD[1] (+4,800)	Cross sections surveyed									
	1 DS	2 DS	3 DS	4 DS	5 DS	6 DS	7 DS	8 DS	9 DS	10 DS
	North Fork Teton River at Site NF-E (Continued)									
	September 1978									
85.0	1,212	--	--	--	--	--	--	--	--	--
84.0	1,060	949	--	--	--	--	--	--	--	--
83.0	910	848	1,106	1,604	--	--	--	--	--	--
82.0	765	750	943	1,414	978	1,216	--	--	--	--
81.0	628	653	782	1,227	837	1,037	1,645	--	--	--
80.0	500	557	625	1,045	698	862	1,383	1,274	--	--
79.0	378	463	472	866	561	688	1,125	1,053	--	507
78.0	256	371	339	691	428	520	868	835	485	434
77.0	148	281	221	521	301	360	612	620	382	363
76.0	74	197	136	355	205	207	365	409	292	294
75.0	29	126	87	204	116	121	162	233	215	229
74.0	5	70	55	76	47	68	77	94	141	169
73.0	--	27	31	31	10	31	22	39	69	113
72.0	--	6	14	9	--	16	2	3	16	60
71.0	--	--	3	1	--	5	--	--	--	24
70.0	--	--	--	--	--	--	--	--	--	8
69.0	--	--	--	--	--	--	--	--	--	--

Table 8. Area, in square feet, of cross sections at various water-surface elevations (Continued)

Water-surface elevation, ft above NGVD[1] (+4,800)	Cross sections surveyed											
	6 US	5 US	4 US	3 US	2 US	1 US	1 DS	2 DS	3 DS	4 DS	5 DS	6 DS
North Fork Teton River at Site NF-F (13055270)												
December 1976												
75.0	--	--	506	--	--	--	--	--	--	--	--	--
74.0	323	463	430	506	698	--	--	--	--	--	--	--
73.0	261	380	356	427	593	453	--	--	--	--	--	--
72.0	203	302	287	352	494	364	541	--	--	--	--	--
71.0	147	228	222	279	399	279	452	--	--	--	--	--
70.0	93	160	162	215	307	200	363	626	609	--	--	381
69.0	42	98	105	154	224	127	274	509	496	467	354	308
68.0	6	39	54	98	146	61	185	398	389	376	276	236
67.0	--	--	14	52	73	10	96	295	290	294	203	171
66.0	--	--	--	15	22	--	7	199	199	216	136	111
65.0	--	--	--	--	--	--	--	106	111	140	74	56
64.0	--	--	--	--	--	--	--	24	28	67	20	9
63.0	--	--	--	--	--	--	--	--	2	5	--	--
May 1977												
75.0	--	--	523	--	--	--	--	--	--	--	--	--
74.0	328	454	447	517	698	--	--	--	--	--	--	--
73.0	265	369	372	438	593	477	--	--	--	--	--	--
72.0	205	289	302	362	491	382	--	--	--	--	--	--
71.0	148	213	235	290	394	292	--	--	--	--	--	--
70.0	95	142	171	222	302	205	--	588	--	--	--	--
69.0	43	77	109	159	213	126	--	470	502	463	367	315
68.0	5	23	52	99	132	57	--	361	397	370	287	242
67.0	--	--	11	51	59	5	--	258	298	286	214	174
66.0	--	--	--	11	6	--	--	160	205	205	145	112
65.0	--	--	--	--	--	--	--	68	116	128	82	55
64.0	--	--	--	--	--	--	--	4	31	54	27	8
63.0	--	--	--	--	--	--	--	--	3	1	--	--
September 1978												
75.0	--	--	469	--	--	--	--	--	--	--	--	--
74.0	--	--	393	414	549	--	--	--	--	--	--	--
73.0	--	--	319	335	446	420	--	--	--	--	--	--
72.0	--	--	249	260	348	331	--	--	--	--	--	--
71.0	--	--	183	190	254	246	--	--	--	--	--	--
70.0	--	--	122	124	164	166	--	505	526	--	--	413
69.0	--	--	78	64	82	89	--	388	388	370	336	339
68.0	--	--	48	20	18	21	--	277	283	279	257	268
67.0	--	--	25	5	2	2	--	170	182	197	184	201
66.0	--	--	8	--	--	--	--	77	91	117	116	141
65.0	--	--	--	--	--	--	--	25	49	58	55	86
64.0	--	--	--	--	--	--	--	--	22	11	6	39
63.0	--	--	--	--	--	--	--	--	1	--	--	0

Table 8. Area, in square feet, of cross sections at various water-surface elevations (Continued)

Water-surface elevation, ft above NGVD[1] (+4,800)	Cross sections surveyed				
	1 DS	2 DS	3 DS	4 DS	5 DS
North Fork Teton River at Site NF-G (13055300)					
December 1976					
48.0	332	--	--	--	--
47.0	260	468	--	--	--
46.0	190	389	569	543	680
45.0	122	311	472	454	548
44.0	58	236	379	366	420
43.0	7	168	290	281	298
42.0	--	104	209	203	187
41.0	--	44	135	132	97
40.0	--	10	67	71	31
39.0	--	--	12	20	0
April 1977					
48.0	--	653	--	--	--
47.0	--	562	--	--	--
46.0	--	475	--	--	698
45.0	--	391	475	--	562
44.0	--	314	379	359	429
43.0	--	245	290	276	300
42.0	--	178	206	199	184
41.0	--	112	128	128	93
40.0	--	51	58	67	27
39.0	--	12	6	18	--
September 1978					
46.0	--	--	--	--	685
45.0	--	--	410	--	551
44.0	--	--	316	316	421
43.0	--	--	228	232	295
42.0	--	--	146	155	179
41.0	--	--	71	85	91
40.0	--	--	8	21	34
39.0	--	--	--	0	2

[1]National Geodetic Vertical Datum of 1929

Table 9. Survey summary--rates of deposition or erosion from surveyed subreaches

Dates of surveys	Net change in channel volume		Deposition or erosion (tons/d)[1]
	Deposition (ft^3)	Erosion (ft^3)	
North Fork Teton River at Teton Island Bridge NF-A (13055198)			
11-30-76 to 04-13-77 (134 days)	7,106		+2.65
04-13-77 to 10-19-77 (189 days)		8,023	-2.12
10-19-77 to 09-28-78 (343 days)	17,930		+2.61
04-13-77 to 09-28-78 (532 days)	9,910		+.93
North Fork Teton River at Site NF-C (13055230)			
12-01-76 to 03-30-77 (119 days)	15,730		+6.61
03-30-77 to 09-27-78 (546 days)		4,330	-.40
North Fork Teton River at Site NF-D (13055250)			
12-02-76 to 04-14-77 (133 days)		11,340	-4.26
04-14-77 to 09-27-78 (531 days)	1,044		+.10
North Fork Teton River at Site NF-E			
12-02-76 to 05-11-77 (160 days)	3,475		+1.1
05-11-77 to 09-27-78 (484 days)		89,655	-9.26
North Fork Teton River at Site NF-F (13055270)			
12-03-76 to 05-10-77 (158 days)		5,193	-1.64
05-10-77 to 09-26-78 (484 days)	123,500		+12.8
North Fork Teton River at Site NF-G (13055300)			
12-03-76 to 04-14-77 (132 days)		7,884	-2.99
04-14-77 to 09-25-77 (509 days)	17,620		+1.73

[1] (tons/d) = average change in section area x length of subreach x $\frac{100 \text{ lbs/ft}^3}{2{,}000 \text{ lbs/ton}}$ ÷ days between survey.

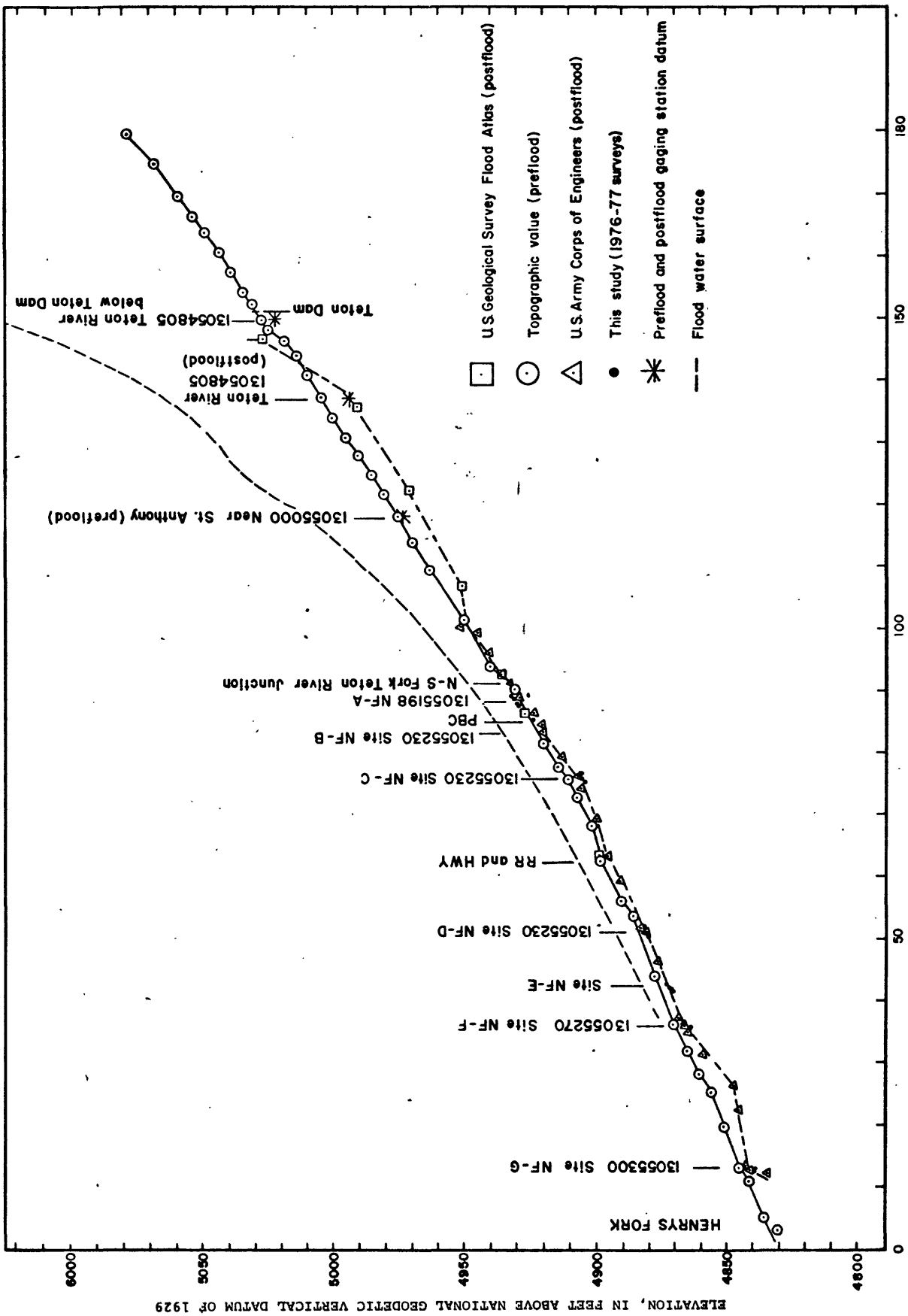


Figure 7. Streambed profile below Teton Dam site (preflood and postflood).

Table 10. Sediment distribution between surveyed subreaches and measured sites
(for about 460 days during 1977-78)

Location and station	Measured sediment discharge (tons)						Surveyed subreach		Remarks
	Suspended sediment	Change between sites	Bedload sediment	Change between sites	Total sediment	Change between sites	Deposition[1] (tons)	Erosion[1] (tons)	
North Fork Teton River at Teton Island Bridge (13055198) NF-A	13,400	[2]7,000	2,520	--	15,920	7,000	430		Streambed stable; road fill at downstream sections.
North Fork Teton River below Teton Island feeder canal NF-TIC	[3]6,400	1,310	[3]2,520	5,240	[3]8,920	6,550			
North Fork Teton River at Site (13055210) NF-B	7,710	1,400	7,760	4,390	15,470	2,990			
North Fork Teton River at Site NF-C (13055230)	9,110	2,840	3,370	190	12,480	3,030		180	Slight erosion of streambed upstream of bridge.
North Fork Teton River at Site NF-D (13055250)	11,950		3,560		15,510		46		Erosion upstream of bridge, sections 2, 4-6. Slight erosion downstream at sections 1-5. Tonnage affected by road fill at section 6 downstream.
North Fork Teton River at Site NF-E		4,150		1,050		5,200		4,260	Severe erosion of left banks, sections 1 and 2. Streambed eroded. Sediment deposited at streambed of sections 8-10.
North Fork Teton River at Site NF-F (13055270)	16,100	370	4,610	4,520	20,710	4,150	5,890		Deposition at sections 1-4 upstream and 2-5 downstream. Erosion at section 6 downstream.
North Fork Teton River at Site NF-G (13055300)	16,470		91		16,560		800		Deposition at sections 2-4; erosion at section 5.

[1] Calculated as last rate indicated on table 9, times 460 days.
[2] Estimated suspended sediment diverted through Teton Island feeder canal.
[3] Estimate.

North Fork Teton River may indicate that equilibrium between the hydraulic flow properties, channel gradient, and channel shape may temporarily exist. The large increase in measured bedload (5,240 tons) at site NF-B (fig. 2) can be directly attributed to erosion and transport of material derived from upstream roadfill. The majority of this material (4,390 tons) was redeposited within 1 mile downstream. The single largest increase in suspended sediment occurred above site NF-F, presumably derived from eroded bank material at sections 1 and 2 (fig. 6) of subreach NF-E. However, some of this increase may be partly due to irrigation returns. Whatever the cause, fine material remained in suspension past site NF-G. Virtually the entire bedload was redeposited between sites NF-F and NF-G.

SUMMARY

Future channel change on the North Fork Teton River will be directly controlled by readjustments of the Teton River. Based on scour (fig. 7) and observed transport rates (tables 9 and 10), deposition should continue in the lower North Fork Teton River as the entire river system attempts to regrade to pre-dam conditions. If the long-term streamflow and limited miscellaneous sediment data of tables 2 and 3 are representative of future transport conditions at St. Anthony site (T-B), an estimated 140 tons/d total sediment discharge (18 tons/d of bedload) would be transported downstream. However, gravel and concrete impoundments (located between St. Anthony site T-B and junction of North and South Forks T-D) will temporarily trap the coarse load. Under these conditions, the once meandering reaches of the North Fork Teton River, now shortened by channel realinements, may revert to migration by lateral erosion.

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Table of suspended-sediment discharge

Table 4. Suspended-sediment discharge, April 1977 to September 1978

13055198 NORTH FORK TETON RIVER AT TETON ISLAND BRIDGE (SITE NF-A)

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1977			MAY			JUNE	
1	120	20	6.5	230	45	28	272	7	5.1
2	122	15	4.9	218	30	18	329	6	5.3
3	120	12	3.9	226	20	12	447	10	12
4	119	10	3.2	220	80	48	482	14	18
5	122	18	5.9	222	45	27	501	20	27
6	140	35	13	188	25	13	526	30	43
7	213	80	46	188	15	7.6	555	40	60
8	220	150	89	186	30	15	597	30	48
9	393	310	329	190	50	26	610	25	41
10	461	200	249	211	70	40	644	85	148
11	334	105	95	252	95	65	594	95	152
12	278	140	105	228	40	25	552	200	298
13	253	55	38	242	25	16	435	150	176
14	265	135	97	281	18	14	352	80	76
15	277	50	37	332	14	13	302	35	29
16	261	35	25	344	11	10	281	25	19
17	281	33	25	352	17	16	288	15	12
18	281	32	24	349	35	33	279	8	6.0
19	277	33	25	341	25	23	263	9	6.4
20	295	34	27	354	18	17	275	14	10
21	272	33	24	354	16	15	293	10	7.9
22	230	30	19	324	15	13	304	7	5.7
23	211	66	38	329	20	18	322	7	6.1
24	240	40	26	354	30	29	355	12	12
25	247	28	19	367	15	15	290	9	7.0
26	302	45	37	380	14	14	214	7	4.0
27	349	80	75	385	13	14	295	11	8.8
28	309	60	50	364	12	12	288	7	5.4
29	244	35	23	339	10	9.2	293	9	7.1
30	215	20	12	310	9	7.5	300	14	11
31	---	---	---	279	8	6.0	---	---	---
TOTAL	7451	---	1571.4	8939	---	619.3	11538	---	1266.8
		JULY			AUGUST			SEPTEMBER	
1	307	10	8.3	270	8	5.8	199	6	3.2
2	272	7	5.1	232	7	4.4	186	4	2.0
3	261	13	9.2	228	6	3.7	179	4	1.9
4	312	19	16	226	7	4.3	179	6	2.9
5	324	10	8.7	234	9	5.7	177	7	3.3
6	230	7	4.3	266	10	7.2	174	6	2.8
7	223	17	10	288	12	9.3	163	5	2.2
8	312	13	11	281	9	6.8	150	4	1.6
9	305	9	7.4	238	7	4.5	148	4	1.6
10	315	7	6.0	218	5	2.9	158	9	3.8
11	332	9	8.1	203	4	2.2	177	6	2.9
12	339	11	10	199	5	2.7	179	4	1.9
13	332	9	8.1	211	6	3.4	184	4	2.0
14	300	8	6.5	226	7	4.3	181	6	2.9
15	300	7	5.7	222	6	3.6	163	10	4.4
16	284	8	6.1	224	5	3.0	215	8	4.6
17	281	9	6.8	240	5	3.2	230	5	3.1
18	281	9	6.8	244	8	5.3	205	7	3.9
19	279	8	6.0	232	7	4.4	216	10	5.8
20	254	10	6.9	216	6	3.5	234	8	5.1
21	163	8	3.5	211	5	2.8	234	6	3.8
22	183	7	3.5	209	5	2.8	240	6	3.9
23	275	12	8.9	177	4	1.9	213	5	2.9
24	307	9	7.5	174	3	1.4	172	5	2.3
25	352	10	9.5	176	4	1.9	170	5	2.3
26	327	15	13	196	4	2.1	167	4	1.8
27	281	8	6.1	222	5	3.0	162	4	1.7
28	250	6	4.1	248	6	4.0	162	4	1.7
29	242	7	4.6	240	7	4.5	165	5	2.2
30	230	10	6.2	220	8	4.8	177	5	2.4
31	248	9	6.0	213	8	4.6	---	---	---
TOTAL	8701	---	229.9	6984	---	124.0	5559	---	86.9
YEAR	49172		3898.3						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055198 NORTH FORK TETON RIVER AT TETON ISLAND BRIDGE (SITE NF-A) (CONTINUED)

DAY	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	203	5	2.7	266	6	4.3	105	4	1.1
2	205	5	2.8	298	5	4.0	92	4	.99
3	190	4	2.1	238	3	1.9	106	7	2.0
4	183	4	2.0	158	2	.85	126	18	6.1
5	177	3	1.4	148	2	.80	138	35	13
6	177	3	1.4	150	2	.81	115	20	6.2
7	176	3	1.4	150	2	.81	110	13	3.9
8	177	3	1.4	151	3	1.2	124	17	5.7
9	179	2	.97	145	3	1.2	126	28	9.5
10	179	2	.97	133	4	1.4	152	15	6.2
11	167	2	.90	141	3	1.1	102	6	1.7
12	155	1	.42	143	3	1.2	104	5	1.4
13	153	1	.41	143	2	.77	105	8	2.3
14	153	1	.41	141	2	.76	105	13	3.7
15	155	1	.42	130	1	.35	141	19	7.2
16	158	1	.43	87	1	.23	257	25	17
17	160	3	1.3	84	2	.45	170	18	8.3
18	163	13	5.7	77	3	.62	116	11	3.4
19	176	8	3.8	71	7	1.3	126	10	3.4
20	248	5	3.3	118	9	2.9	116	14	4.4
21	259	4	2.8	131	13	4.6	103	11	3.1
22	254	3	2.1	217	11	6.4	153	13	5.4
23	250	3	2.0	188	7	3.6	174	17	8.0
24	248	3	2.0	114	4	1.2	120	14	4.5
25	248	3	2.0	91	3	.74	94	5	1.3
26	252	3	2.0	102	8	2.2	94	3	.76
27	248	3	2.0	130	20	7.0	105	4	1.1
28	246	3	2.0	153	13	5.4	119	3	.96
29	244	3	2.0	129	8	2.8	91	3	.74
30	248	4	2.7	113	5	1.5	98	3	.79
31	261	5	3.5	---	---	---	100	4	1.1
TOTAL	6292	---	59.33	4340	---	62.39	3787	---	135.24
		JANUARY 1978			FEBRUARY			MARCH	
1	111	6	1.8	91	1	.25	86	11	2.6
2	119	9	2.9	91	1	.25	87	12	2.8
3	162	14	6.1	92	1	.25	91	12	2.9
4	222	20	12	92	1	.25	87	13	3.1
5	188	16	8.1	91	1	.25	96	13	3.4
6	136	11	4.0	91	1	.25	97	14	3.7
7	111	8	2.4	94	1	.25	100	14	3.8
8	102	6	1.7	97	1	.26	102	14	3.9
9	94	5	1.3	96	1	.26	103	14	3.9
10	94	4	1.0	92	1	.25	104	13	3.7
11	94	4	1.0	94	1	.25	106	12	3.4
12	94	3	.76	93	1	.25	106	11	3.1
13	93	3	.75	90	1	.24	109	11	3.2
14	92	3	.75	78	2	.42	106	10	2.9
15	93	3	.75	83	3	.67	105	9	2.6
16	96	3	.78	86	6	1.4	99	9	2.4
17	97	2	.52	103	11	3.1	99	8	2.1
18	99	2	.53	83	9	2.0	102	8	2.2
19	98	2	.53	85	7	1.6	105	7	2.0
20	97	2	.52	84	6	1.4	111	7	2.1
21	98	2	.53	86	6	1.4	129	8	2.8
22	98	2	.53	86	5	1.2	141	8	3.0
23	98	2	.53	81	6	1.3	153	9	3.7
24	100	2	.54	79	7	1.5	167	10	4.5
25	69	2	.37	83	8	1.8	197	11	5.9
26	93	2	.50	83	9	2.0	192	12	6.2
27	93	1	.25	83	10	2.2	208	20	11
28	93	1	.25	83	10	2.2	252	40	27
29	96	1	.26	---	---	---	284	80	61
30	96	1	.26	---	---	---	359	170	165
31	92	1	.25	---	---	---	485	300	393
TOTAL	3318	---	52.46	2470	---	27.45	4568	---	742.9

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055198 NORTH FORK TETON RIVER AT TETON ISLAND BRIDGE (SITE NF-A) (CONTINUED)

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1978			MAY			JUNE	
1	734	200	396	349	14	13	704	20	38
2	702	120	227	388	16	17	610	17	28
3	435	70	82	343	24	22	597	16	26
4	314	60	51	504	33	45	687	24	45
5	307	45	37	510	35	48	740	30	60
6	257	40	28	447	24	29	884	38	91
7	261	35	25	364	16	16	1020	48	132
8	346	45	42	324	12	10	1130	55	168
9	334	40	36	305	11	9.1	1260	80	272
10	298	38	31	324	15	13	1410	130	495
11	284	35	27	482	28	36	1440	130	505
12	298	31	25	684	50	92	1220	75	247
13	281	28	21	630	45	77	969	40	105
14	270	25	18	613	40	66	942	35	89
15	254	23	16	922	130	324	1090	33	97
16	244	20	13	1170	180	569	1140	35	108
17	242	18	12	1180	130	414	1040	34	95
18	236	16	10	885	80	191	858	28	65
19	226	15	9.2	834	55	124	740	24	48
20	232	14	8.8	734	45	89	740	20	40
21	226	13	7.9	678	40	73	725	17	33
22	226	13	7.9	771	47	98	885	21	50
23	222	12	7.2	928	50	125	1010	24	65
24	211	11	6.3	1030	60	167	1060	24	69
25	201	10	5.4	985	70	186	1060	22	63
26	220	14	8.3	818	60	133	996	18	48
27	268	17	12	702	50	95	799	16	35
28	362	21	21	658	40	71	693	14	26
29	346	18	17	707	35	67	783	16	34
30	336	16	15	824	28	62	921	18	45
31	---	---	---	818	24	53	---	---	---
TOTAL	9173	---	1223.0	20911	---	3334.1	28153	---	3222
		JULY			AUGUST			SEPTEMBER	
1	987	20	53	377	10	10	273	4	2.9
2	990	21	56	327	8	7.1	283	3	2.3
3	957	21	54	300	6	4.9	291	2	1.6
4	921	18	45	281	5	3.8	302	2	1.6
5	849	15	34	275	8	5.9	321	1	.87
6	755	12	24	284	10	7.7	343	2	1.9
7	722	10	19	281	8	6.1	363	2	2.0
8	755	10	20	268	7	5.1	374	3	3.0
9	765	10	21	246	6	4.0	350	3	2.8
10	762	10	21	247	5	3.3	342	2	1.8
11	746	9	18	248	6	4.0	361	2	1.9
12	759	10	20	253	7	4.8	408	3	3.3
13	752	8	16	265	8	5.7	437	4	4.7
14	716	7	14	368	9	8.9	452	5	6.1
15	702	8	15	362	7	6.8	417	5	5.6
16	722	8	16	307	6	5.0	357	4	3.9
17	719	8	16	344	5	4.6	332	3	2.7
18	687	7	13	376	6	6.1	327	2	1.8
19	613	8	13	345	7	6.5	327	2	1.8
20	545	10	15	324	4	3.5	322	2	1.7
21	504	12	16	311	3	2.5	310	3	2.5
22	461	14	17	294	2	1.6	288	4	3.1
23	415	16	18	295	2	1.6	275	5	3.7
24	380	18	18	303	3	2.5	263	6	4.3
25	354	19	18	280	3	2.3	248	3	2.0
26	377	15	15	264	3	2.1	240	2	1.3
27	354	12	11	260	2	1.4	232	2	1.3
28	362	13	13	259	2	1.4	224	3	1.8
29	410	12	13	255	3	2.1	221	3	1.8
30	452	11	13	257	4	2.8	218	4	2.4
31	424	13	15	260	5	3.5	---	---	---
TOTAL	19917	---	670	9116	---	137.6	9501	---	78.47
YEAR	121546		9744.94						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055210 NORTH FORK TETON RIVER AT SITE NF-B

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1977			MAY			JUNE	
1	60	25	4.1	45	45	5.5	64	7	1.2
2	53	14	2.0	26	30	2.1	110	8	2.4
3	47	12	1.5	2.0	20	0.11	220	11	6.5
4	45	10	1.2	5.0	80	1.1	205	15	8.3
5	53	18	2.6	21	45	2.6	200	25	13
6	88	35	8.3	25	25	1.7	210	40	23
7	130	80	28	15	15	0.61	200	55	30
8	200	140	76	3.0	30	0.24	185	45	22
9	340	300	275	1.0	50	0.14	210	55	31
10	375	200	202	3.0	70	0.57	195	110	58
11	240	100	65	15	85	3.4	150	200	81
12	185	140	70	20	20	1.1	130	240	84
13	175	55	26	40	15	1.6	65	150	26
14	170	130	60	84	30	6.8	30	80	6.5
15	180	55	27	130	15	5.3	15	35	1.4
16	160	40	17	155	11	4.6	15	25	1.0
17	155	32	13	160	17	7.3	9.0	15	0.36
18	165	32	14	155	35	15	3.0	8	0.06
19	170	34	16	150	25	10	1.0	9	0.02
20	170	35	16	160	18	7.8	2.0	11	0.06
21	150	33	13	175	16	7.6	7.0	8	0.15
22	130	28	9.8	140	15	5.7	15	7	0.28
23	115	66	20	135	20	7.3	30	6	0.49
24	105	40	11	165	30	13	18	5	0.24
25	100	27	7.3	175	15	7.1	5.0	4	0.05
26	155	45	19	185	14	7.0	2.0	4	0.02
27	175	90	43	175	13	6.1	1.0	3	0.01
28	165	60	27	160	12	5.2	3.0	4	0.03
29	88	35	8.3	140	10	3.8	7.0	6	0.11
30	25	20	1.4	110	9	2.7	14	9	0.34
31	---	---	---	82	8	1.8	---	---	---
TOTAL	4369	---	1084.5	2857.0	---	144.87	2321.0	---	397.52
		JULY			AUGUST			SEPTEMBER	
1	6.0	7	0.11	165	5	2.2	120	5	1.6
2	2.0	6	0.03	135	4	1.5	115	3	0.93
3	1.0	6	0.02	62	4	0.67	93	3	0.75
4	13	7	0.25	70	5	0.94	100	3	0.81
5	4.0	8	0.09	68	7	1.3	66	4	0.71
6	1.0	8	0.02	115	9	2.8	35	4	0.38
7	40	7	0.76	110	12	3.6	23	4	0.25
8	12	7	0.23	115	8	2.5	40	5	0.54
9	3.0	6	0.05	155	7	2.9	43	6	0.70
10	1.0	5	0.01	160	6	2.6	65	6	1.1
11	3.0	4	0.03	130	5	1.8	75	6	1.2
12	11	3	0.09	125	6	2.0	100	5	1.4
13	6.0	3	0.05	125	7	2.4	97	5	1.3
14	1.0	2	0.01	140	6	2.3	125	7	2.4
15	0.50	2	.00	125	6	2.0	110	10	3.0
16	0.40	2	.00	140	5	1.9	150	13	5.3
17	0.30	2	.00	145	5	2.0	140	11	4.2
18	0.20	2	.00	155	6	2.5	120	8	2.6
19	1.0	2	0.01	135	7	2.6	135	8	2.9
20	15	7	0.28	135	6	2.2	145	11	4.3
21	37	15	1.5	130	5	1.8	150	13	5.3
22	50	13	1.8	130	4	1.4	155	11	4.6
23	75	12	2.4	87	3	0.70	128	9	3.1
24	60	11	1.8	95	4	1.0	94	7	1.8
25	90	10	2.4	84	5	1.1	98	6	1.6
26	130	14	4.9	115	6	1.9	93	5	1.3
27	180	14	6.8	140	5	1.9	87	4	0.94
28	145	13	5.1	170	5	2.3	92	4	0.99
29	140	11	4.2	160	4	1.7	101	5	1.4
30	135	8	2.9	125	5	1.7	103	5	1.4
31	105	6	2.7	130	5	1.8	---	---	---
TOTAL	1328.40	---	38.54	3876	---	60.01	2998	---	58.80
YEAR	17749.40		1784.24						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055210 NORTH FORK TETON RIVER AT SITE NF-B (CONTINUED)

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	108	5	1.5	205	11	6.1	58	4	.63
2	106	5	1.4	220	19	11	53	3	.43
3	102	5	1.4	150	17	6.9	58	4	.63
4	98	4	1.1	110	11	3.3	80	8	1.7
5	94	4	1.0	87	7	1.6	95	18	4.6
6	92	4	.99	85	5	1.1	90	14	3.4
7	92	3	.75	90	4	.97	70	11	2.1
8	93	3	.75	100	3	.81	50	8	1.1
9	94	3	.76	128	2	.69	42	5	.57
10	95	2	.51	130	2	.70	40	3	.32
11	96	2	.52	130	2	.70	39	2	.21
12	93	2	.50	128	3	1.0	35	2	.19
13	90	2	.49	120	3	.97	32	1	.09
14	87	2	.47	105	3	.85	30	2	.16
15	85	2	.46	80	3	.65	29	4	.31
16	84	2	.45	70	3	.57	28	8	.60
17	83	4	.90	60	3	.49	28	17	1.3
18	80	9	1.9	60	4	.65	27	18	1.3
19	73	6	1.2	62	4	.67	27	17	1.2
20	63	4	.68	61	5	.82	26	16	1.1
21	170	3	1.4	60	6	.97	25	15	1.0
22	180	2	.97	75	7	1.4	24	15	.97
23	175	2	.94	88	8	1.9	23	14	.87
24	175	2	.94	67	5	.90	22	16	.95
25	177	1	.48	54	4	.58	32	18	1.6
26	176	1	.48	58	5	.78	30	10	.81
27	172	1	.46	65	7	1.2	29	7	.55
28	170	2	.92	74	9	1.8	28	5	.38
29	172	3	1.4	67	7	1.3	28	6	.45
30	180	4	1.9	62	5	.84	30	6	.49
31	192	6	3.1	---	---	---	32	7	.60
TOTAL	3747	---	30.72	2851	---	52.21	1240	---	30.61
		JANUARY 1978			FEBRUARY			MARCH	
1							---	---	---
2							---	---	---
3							---	---	---
4							---	---	---
5							---	---	---
6							---	---	---
7							---	---	---
8							---	---	---
9							---	---	---
10							---	---	---
11							---	---	---
12							---	---	---
13							---	---	---
14							---	---	---
15							---	---	---
16							---	---	---
17							---	---	---
18							---	---	---
19							---	---	---
20							---	---	---
21							---	---	---
22							---	---	---
23							---	---	---
24							---	---	---
25							---	---	---
26							---	---	---
27							---	---	---
28							---	---	---
29							---	---	---
30							290	70	55
31							360	115	112
TOTAL							650	---	167

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055210 NORTH FORK TETON RIVER AT SITE NF-B (CONTINUED)

DAY	APRIL 1978 MEAN DISCHARGE (ft^3/s)	APRIL 1978 MEAN CONCENTRATION (MG/L)	APRIL 1978 SEDIMENT DISCHARGE (TONS/DAY)	MAY MEAN DISCHARGE (ft^3/s)	MAY MEAN CONCENTRATION (MG/L)	MAY SEDIMENT DISCHARGE (TONS/DAY)	JUNE MEAN DISCHARGE (ft^3/s)	JUNE MEAN CONCENTRATION (MG/L)	JUNE SEDIMENT DISCHARGE (TONS/DAY)
1	430	185	215	335	14	13	445	20	24
2	330	120	107	335	17	15	400	17	18
3	265	70	50	410	23	25	390	30	32
4	270	50	36	475	34	44	480	70	91
5	270	45	33	450	27	33	500	65	88
6	265	45	32	380	22	23	600	60	97
7	265	48	34	300	17	14	700	58	110
8	265	50	36	240	13	8.4	790	65	139
9	265	55	39	225	11	6.7	900	95	231
10	260	60	42	245	16	11	980	140	370
11	270	70	51	400	25	27	920	110	273
12	260	45	32	560	37	56	740	75	150
13	255	25	17	540	33	48	550	45	67
14	260	19	13	495	45	60	480	35	45
15	260	14	9.8	720	140	272	620	37	62
16	240	13	8.4	940	190	482	710	45	86
17	230	13	8.1	780	120	253	550	35	52
18	220	12	7.1	620	75	126	380	30	31
19	210	12	6.8	570	55	85	300	27	22
20	212	11	6.3	510	40	55	265	22	16
21	215	12	7.0	465	35	44	250	19	13
22	210	11	6.2	530	40	57	360	25	24
23	205	10	5.5	640	50	86	450	33	40
24	215	11	6.4	740	55	110	510	38	52
25	215	12	7.0	660	40	71	520	28	39
26	215	14	8.1	560	35	53	410	21	23
27	215	18	10	480	40	52	285	18	14
28	215	20	12	415	35	39	255	19	13
29	215	22	13	475	28	36	335	20	18
30	280	19	14	560	32	48	390	24	25
31	---	---	---	510	25	34	---	---	---
TOTAL	7502	---	872.7	15565	---	2287.1	15465	---	2265

DAY	JULY MEAN DISCHARGE (ft^3/s)	JULY MEAN CONCENTRATION (MG/L)	JULY SEDIMENT DISCHARGE (TONS/DAY)	AUGUST MEAN DISCHARGE (ft^3/s)	AUGUST MEAN CONCENTRATION (MG/L)	AUGUST SEDIMENT DISCHARGE (TONS/DAY)	SEPTEMBER MEAN DISCHARGE (ft^3/s)	SEPTEMBER MEAN CONCENTRATION (MG/L)	SEPTEMBER SEDIMENT DISCHARGE (TONS/DAY)
1	435	22	26	7.0	4	.08	80	3	.65
2	455	19	23	4.0	3	.03	72	2	.39
3	440	16	19	2.0	2	.01	66	2	.36
4	400	14	15	1.0	2	.01	64	2	.35
5	350	12	11	.50	2	.00	66	3	.53
6	290	11	8.6	.40	1	.00	75	4	.81
7	220	10	5.9	.30	1	.00	78	5	1.1
8	225	9	5.5	.20	1	.00	76	6	1.2
9	235	8	5.1	.20	1	.00	72	6	1.2
10	230	7	4.3	.10	1	.00	68	5	.92
11	225	14	8.5	.10	1	.00	80	4	.86
12	220	18	11	.10	1	.00	84	4	.91
13	200	13	7.0	5.0	1	.01	89	3	.72
14	185	10	5.0	10	2	.05	95	3	.77
15	160	9	3.9	30	3	.24	90	3	.73
16	155	9	3.8	52	4	.56	80	3	.65
17	155	8	3.3	100	6	1.6	72	4	.78
18	165	7	3.1	165	8	3.6	75	4	.81
19	125	7	2.4	170	11	5.0	80	5	1.1
20	80	8	1.7	165	10	4.5	89	5	1.2
21	50	7	.94	150	4	1.6	83	3	.67
22	31	6	.50	130	3	1.1	80	1	.22
23	20	6	.32	115	3	.93	75	2	.41
24	12	5	.16	102	3	.83	71	2	.38
25	7.0	4	.08	88	3	.71	68	3	.55
26	3.0	4	.03	81	3	.66	66	2	.36
27	2.0	3	.02	77	2	.42	64	2	.35
28	1.0	3	.01	76	2	.41	62	1	.17
29	.50	2	.00	77	3	.62	60	1	.16
30	3.0	6	.05	79	5	1.1	58	1	.16
31	9.0	5	.12	80	4	.86	---	---	---
TOTAL	5088.50	---	175.33	1767.90	---	24.93	2238	---	19.47
YEAR	56114.40		5925.07						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055230 NORTH FORK TETON RIVER AT SITE NF-C

DAY	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	APRIL 1977			MAY			JUNE		
1	60	20	3.2	45	16	1.9	64	8	1.4
2	53	16	2.3	26	17	1.2	120	11	3.6
3	47	11	1.4	2.0	40	0.22	220	15	8.9
4	45	9	1.1	5.0	90	1.2	205	20	11
5	53	10	1.4	21	40	2.3	190	25	13
6	88	12	2.9	25	25	1.7	210	35	20
7	130	60	21	15	15	0.61	230	55	34
8	200	175	94	3.0	35	0.28	240	40	26
9	340	300	275	1.0	50	0.14	250	55	37
10	375	200	202	3.0	70	0.57	195	85	45
11	240	105	68	8.0	80	1.7	160	200	86
12	185	65	32	20	15	0.81	130	250	88
13	175	70	33	40	20	2.2	73	140	28
14	170	115	53	84	30	6.8	40	80	8.6
15	180	40	19	130	15	5.3	23	48	3.0
16	160	30	13	155	11	4.6	15	30	1.2
17	155	25	10	160	18	7.8	9.0	15	0.36
18	165	25	11	155	35	15	3.0	10	0.08
19	170	26	12	150	25	10	1.0	10	0.03
20	170	27	12	160	30	13	2.0	11	0.06
21	150	28	11	175	25	12	7.0	9	0.17
22	130	45	16	140	17	6.4	15	10	0.41
23	115	70	22	135	20	7.3	30	15	1.2
24	105	40	11	165	21	9.4	18	10	0.49
25	100	25	6.8	175	20	9.5	5.0	6	0.08
26	155	45	19	185	16	8.0	2.0	4	0.02
27	175	70	33	175	13	6.1	1.0	3	0.01
28	165	40	18	160	20	8.6	3.0	4	0.03
29	88	25	5.9	140	30	11	7.0	6	0.11
30	25	15	1.0	110	15	4.5	14	10	0.38
31	---	---	---	82	9	2.0	---	---	---
TOTAL	4369	---	1011.0	2850.0	---	162.13	2482.0	---	418.13
	JULY			AUGUST			SEPTEMBER		
1	6.0	7	0.11	165	6	2.7	120	5	1.6
2	2.0	6	0.03	125	6	2.0	115	4	1.2
3	1.0	5	0.01	62	5	0.84	93	4	1.0
4	13	6	0.21	58	4	0.63	92	3	0.75
5	4.0	7	0.08	68	7	1.3	66	3	0.53
6	1.0	8	0.02	100	12	3.2	30	4	0.32
7	40	7	0.76	110	11	3.3	23	5	0.31
8	12	7	0.23	120	11	3.6	25	6	0.41
9	3.0	6	0.05	155	12	5.0	43	7	0.81
10	1.0	5	0.01	145	9	3.5	53	8	1.1
11	4.0	4	0.04	130	8	2.8	75	8	1.6
12	11	3	0.09	125	7	2.4	85	7	1.6
13	6.0	3	0.05	125	8	2.7	97	8	2.1
14	1.0	2	0.01	130	9	3.2	105	9	2.6
15	0.50	2	.00	125	7	2.4	110	10	3.0
16	0.40	2	.00	130	6	2.1	130	13	4.6
17	0.30	2	.00	145	6	2.3	140	11	4.2
18	0.20	2	.00	145	11	4.3	120	10	3.2
19	1.0	2	0.01	135	9	3.3	135	10	3.6
20	15	7	0.28	120	8	2.6	145	12	4.7
21	80	15	3.2	115	7	2.2	150	13	5.3
22	50	13	1.8	115	6	1.9	155	11	4.6
23	105	12	3.4	87	5	1.2	128	9	3.1
24	70	11	2.1	83	4	0.90	94	8	2.0
25	100	10	2.7	84	5	1.1	98	8	2.1
26	130	15	5.3	100	6	1.6	93	7	1.8
27	170	14	6.4	140	7	2.6	87	7	1.6
28	145	13	5.1	155	8	3.3	92	8	2.0
29	135	11	4.0	145	7	2.7	101	8	2.2
30	135	8	2.9	125	6	2.0	103	9	2.5
31	150	6	2.4	120	5	1.6	---	---	---
TOTAL	1392.40	---	41.29	3687	---	75.27	2903	---	66.43
YEAR	17683.40		1774.25						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
				13055230 NORTH FORK TETON RIVER AT SITE NF-C (CONTINUED)					
		OCTOBER			NOVEMBER			DECEMBER	
1	108	9	2.6	205	8	4.4	58	5	.78
2	106	9	2.6	220	10	5.9	53	4	.57
3	102	8	2.2	150	11	4.5	58	3	.47
4	98	8	2.1	110	8	2.4	80	8	1.7
5	94	8	2.0	87	7	1.6	95	20	5.1
6	92	8	2.0	85	5	1.1	90	30	7.3
7	92	7	1.7	90	4	.97	70	28	5.3
8	93	7	1.8	100	3	.81	50	17	2.3
9	94	7	1.8	128	2	.69	42	10	1.1
10	95	6	1.5	130	2	.70	40	7	.76
11	96	6	1.6	130	2	.70	39	4	.42
12	93	6	1.5	128	2	.69	35	3	.28
13	90	5	1.2	120	2	.65	32	3	.26
14	87	5	1.2	105	3	.85	30	3	.24
15	85	4	.92	80	3	.65	29	5	.39
16	84	4	.91	70	6	1.1	28	7	.53
17	83	4	.90	60	5	.81	28	11	.83
18	80	4	.86	60	5	.81	27	15	1.1
19	73	3	.59	62	5	.84	27	17	1.2
20	63	3	.51	61	6	.99	26	15	1.1
21	170	9	4.1	60	6	.97	25	14	.94
22	180	7	3.4	75	7	1.4	24	13	.84
23	175	5	2.4	88	7	1.7	23	14	.87
24	175	4	1.9	67	6	1.1	22	17	1.0
25	177	3	1.4	54	4	.58	32	8	.69
26	176	2	.95	58	3	.47	30	4	.32
27	172	2	.93	65	3	.53	29	5	.39
28	170	3	1.4	74	7	1.4	28	6	.45
29	172	4	1.9	67	11	2.0	28	4	.30
30	180	5	2.4	62	7	1.2	30	3	.24
31	192	7	3.6	---	---	---	32	2	.17
TOTAL	3747	---	54.87	2851	---	42.51	1240	---	37.94
		JANUARY 1978			FEBRUARY			MARCH	
1							---	---	---
2							---	---	---
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28							---	---	---
29							---	---	---
30							290	100	78
31							350	140	132
TOTAL							640	---	210

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055230 NORTH FORK TETON RIVER AT SITE NF-C (CONTINUED)

DAY	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1978			MAY			JUNE	
1	390	220	232	335	16	14	430	28	33
2	340	125	115	370	20	20	390	22	23
3	270	65	47	410	28	31	385	40	42
4	265	60	43	470	39	49	430	100	116
5	270	58	42	440	30	36	465	230	289
6	265	57	41	380	23	24	510	450	620
7	265	56	40	310	17	14	590	210	335
8	270	50	36	250	13	8.8	680	90	165
9	265	45	32	220	12	7.1	780	190	400
10	260	50	35	245	17	11	920	140	348
11	260	60	42	360	30	29	930	100	251
12	265	45	32	520	50	70	710	70	134
13	260	30	21	510	45	62	520	50	70
14	255	21	14	485	50	65	420	40	45
15	250	17	11	680	130	239	560	40	60
16	240	16	10	900	180	437	720	70	136
17	225	16	9.7	690	110	205	440	55	65
18	220	15	8.9	590	65	104	300	35	28
19	210	15	8.5	540	45	66	250	25	17
20	215	14	8.1	460	50	62	230	20	12
21	215	13	7.5	490	47	62	210	25	14
22	210	13	7.4	520	45	63	270	30	22
23	205	13	7.2	630	45	77	370	35	35
24	205	12	6.6	650	65	114	470	45	57
25	215	11	6.4	630	55	94	560	35	53
26	215	15	8.7	530	45	64	380	27	28
27	210	22	12	440	35	42	280	30	23
28	215	17	9.9	395	35	37	250	25	17
29	220	13	7.7	465	45	56	310	20	17
30	275	14	10	520	50	70	370	27	27
31	---	---	---	470	35	44	---	---	---
TOTAL	7445	---	911.6	14905	---	2276.9	14130	---	3482
		JULY			AUGUST			SEPTEMBER	
1	460	40	50	7.0	9	.17	80	3	.65
2	470	35	44	4.0	8	.09	72	2	.39
3	440	28	33	2.0	8	.04	66	2	.36
4	380	23	24	1.0	5	.01	64	2	.35
5	340	19	17	.50	3	.00	66	2	.36
6	290	17	13	.40	2	.00	75	2	.41
7	240	14	9.1	.30	1	.00	78	2	.42
8	230	13	8.1	.20	2	.00	76	2	.41
9	260	11	7.7	.20	2	.00	72	2	.39
10	250	10	6.8	.10	3	.00	68	2	.37
11	240	19	12	.10	4	.00	80	2	.43
12	225	20	12	.10	6	.00	84	3	.68
13	210	10	5.7	5.0	7	.09	89	3	.72
14	190	7	3.6	10	6	.16	95	3	.77
15	160	6	2.6	30	6	.49	90	4	.97
16	155	8	3.3	52	7	.98	80	5	1.1
17	155	10	4.2	100	9	2.4	72	4	.78
18	165	12	5.3	165	11	4.9	75	3	.61
19	125	16	5.4	170	9	4.1	80	2	.43
20	80	22	4.8	165	7	3.1	89	2	.48
21	50	17	2.3	150	5	2.0	83	2	.45
22	31	13	1.1	130	4	1.4	80	3	.65
23	20	10	.54	115	3	.93	75	3	.61
24	12	7	.23	102	3	.83	71	3	.58
25	7.0	6	.11	88	3	.71	68	3	.55
26	3.0	8	.06	81	3	.66	66	3	.53
27	2.0	10	.05	77	4	.83	64	3	.52
28	1.0	14	.04	76	4	.82	62	3	.50
29	.50	15	.02	77	3	.62	60	3	.49
30	3.0	12	.10	79	3	.64	58	3	.47
31	9.0	10	.24	80	3	.65	---	---	---
TOTAL	5203.50	---	276.39	1767.90	---	26.62	2238	---	16.43
YEAR	54167.40		7335.26						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055250 NORTH FORK TETON RIVER AT SITE NF-D

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1977			MAY			JUNE	
1	35	13	1.2	9.0	50	1.2	64	10	1.7
2	28	8	0.60	3.0	110	0.89	98	14	3.7
3	21	5	0.28	1.0	90	0.24	160	20	8.6
4	27	3	0.22	6.0	65	1.1	205	33	18
5	50	15	2.0	11	25	0.74	170	45	21
6	90	57	14	5.0	15	0.20	140	62	23
7	140	100	38	3.0	10	0.08	145	80	31
8	210	160	91	2.0	13	0.07	160	55	24
9	320	310	268	1.0	20	0.05	180	35	17
10	320	200	173	1.0	28	0.08	145	82	32
11	230	110	68	3.0	45	0.36	110	150	45
12	185	62	31	8.0	15	0.32	90	110	27
13	160	34	15	20	25	1.4	70	70	13
14	140	70	26	70	85	16	53	150	21
15	165	37	16	90	90	22	40	80	8.6
16	150	30	12	115	35	11	23	35	2.2
17	140	25	9.5	145	40	16	13	20	0.70
18	160	25	11	175	60	28	8.0	11	0.24
19	160	24	10	190	95	49	5.0	12	0.16
20	145	23	9.0	210	120	68	2.0	17	0.09
21	130	22	7.7	170	45	21	4.0	13	0.14
22	120	21	6.8	150	25	10	12	7	0.23
23	110	70	21	140	21	7.9	23	5	0.31
24	100	35	9.5	170	19	8.7	13	12	0.42
25	95	21	5.4	190	21	11	7.0	9	0.17
26	132	45	16	180	20	9.7	3.0	5	0.04
27	160	80	35	170	19	8.7	1.0	3	0.01
28	165	150	67	155	35	15	1.0	3	0.01
29	80	55	12	140	55	21	3.0	6	0.05
30	25	100	6.8	110	25	7.4	14	9	0.34
31	---	---	---	80	12	2.6	---	---	---
TOTAL	3993	---	983.00	2723.0	---	339.73	1962.0	---	299.71
		JULY			AUGUST			SEPTEMBER	
1	5.0	5	0.07	150	8	3.2	110	3	0.89
2	2.0	3	0.02	115	7	2.2	95	2	0.51
3	1.0	4	0.01	76	6	1.2	89	2	0.48
4	4.0	5	0.05	56	5	0.76	85	3	0.69
5	7.0	6	0.11	70	8	1.5	60	3	0.49
6	3.0	6	0.05	100	14	3.8	31	2	0.17
7	25	5	0.34	110	14	4.2	25	2	0.14
8	15	10	0.41	120	11	3.6	28	3	0.23
9	8.0	7	0.15	150	20	8.1	35	3	0.28
10	3.0	3	0.02	135	19	6.9	45	4	0.49
11	1.0	2	0.01	135	13	4.7	62	6	1.0
12	3.0	4	0.03	130	8	2.8	86	7	1.6
13	2.0	3	0.02	140	13	4.9	100	6	1.6
14	1.0	2	0.01	130	11	3.9	110	5	1.5
15	0.50	1	.00	125	9	3.0	120	5	1.6
16	0.40	2	.00	120	8	2.6	135	6	2.2
17	0.30	4	.00	160	18	7.8	140	7	2.6
18	0.20	3	.00	150	15	6.1	120	9	2.9
19	0.10	2	.00	140	12	4.5	120	8	2.6
20	10	15	0.41	125	9	3.0	140	7	2.6
21	84	11	2.5	120	8	2.6	150	6	2.4
22	64	8	1.4	125	7	2.4	155	5	2.1
23	105	10	2.8	96	6	1.6	130	4	1.4
24	70	8	1.5	83	7	1.6	100	4	1.1
25	110	7	2.1	84	6	1.4	95	3	0.77
26	130	14	4.9	110	5	1.5	90	3	0.73
27	135	19	6.9	150	7	2.8	86	3	0.70
28	130	13	4.6	155	11	4.6	92	3	0.75
29	125	9	3.0	150	9	3.6	102	4	1.1
30	120	12	3.9	135	6	2.2	112	4	1.2
31	150	9	3.6	120	4	1.3	---	---	---
TOTAL	1314.50	---	38.91	3765	---	104.36	2848	---	36.82
YEAR	16605.50		1802.53						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055250 NORTH FORK TETON RIVER AT SITE NF-D (CONTINUED)

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	108	4	1.2	200	9	4.9	48	3	.39
2	105	4	1.1	220	11	6.5	45	4	.49
3	101	4	1.1	195	4	2.1	60	6	.97
4	98	4	1.1	115	2	.62	80	8	1.7
5	95	4	1.0	90	2	.49	100	10	2.7
6	92	4	.99	80	2	.43	86	8	1.9
7	92	3	.75	84	2	.45	72	6	1.2
8	93	3	.75	100	3	.81	56	12	1.8
9	94	3	.76	115	4	1.2	43	15	1.7
10	94	3	.76	125	4	1.4	40	12	1.3
11	95	2	.51	125	4	1.4	38	11	1.1
12	93	2	.50	120	4	1.3	35	8	.76
13	90	2	.49	115	3	.93	32	10	.86
14	86	2	.46	110	3	.89	30	13	1.1
15	85	2	.46	95	2	.51	29	20	1.6
16	84	2	.45	80	2	.43	28	26	2.0
17	82	2	.44	66	3	.53	27	21	1.5
18	81	1	.22	58	5	.78	26	18	1.3
19	80	1	.22	53	8	1.1	25	16	1.1
20	70	2	.38	55	12	1.8	25	15	1.0
21	145	6	2.3	62	16	2.7	24	13	.84
22	170	5	2.3	72	18	3.5	24	11	.71
23	170	4	1.8	76	8	1.6	23	12	.75
24	170	3	1.4	60	4	.65	22	17	1.0
25	165	3	1.3	52	2	.28	20	5	.27
26	165	3	1.3	56	2	.30	19	3	.15
27	165	4	1.8	65	3	.53	18	2	.10
28	165	4	1.8	72	7	1.4	17	1	.05
29	170	5	2.3	70	4	.76	19	2	.10
30	180	6	2.9	57	3	.46	23	3	.19
31	185	8	4.0	---	---	---	25	6	.41
TOTAL	3668	---	36.84	2843	---	40.75	1159	---	31.04

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1978			FEBRUARY			MARCH	
1							---	---	---
2							---	---	---
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28							---	---	---
29							---	---	---
30							230	60	37
31							320	110	95
TOTAL							550	---	132

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055250 NORTH FORK TETON RIVER AT SITE NF-D (CONTINUED)

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1978			MAY			JUNE	
1	430	260	302	315	35	30	410	38	42
2	290	150	117	310	27	23	380	28	29
3	260	70	49	400	27	29	370	40	40
4	255	60	41	470	53	67	450	180	219
5	250	60	40	440	45	53	510	400	551
6	245	62	41	370	32	32	560	450	680
7	245	60	40	290	25	20	650	130	228
8	240	52	34	240	18	12	740	140	280
9	240	45	29	200	16	8.6	950	165	423
10	235	52	33	250	24	16	1100	190	564
11	230	60	37	400	40	43	900	180	437
12	230	43	27	560	70	106	650	120	211
13	225	32	19	520	60	84	460	65	81
14	225	25	15	490	60	79	410	70	77
15	220	21	12	680	190	349	550	110	163
16	215	19	11	940	360	914	700	95	180
17	210	18	10	720	180	350	470	75	95
18	200	16	8.6	600	115	186	320	60	52
19	195	15	7.9	520	65	91	260	40	28
20	200	16	8.6	480	60	78	230	30	19
21	195	16	8.4	465	55	69	210	38	22
22	190	15	7.7	500	70	94	280	45	34
23	190	13	6.7	590	79	126	400	52	56
24	195	18	9.5	720	78	152	480	60	78
25	195	22	12	630	72	122	510	57	78
26	198	30	16	530	65	93	380	50	51
27	200	40	22	450	60	73	320	45	39
28	200	53	29	390	51	54	250	35	24
29	205	54	30	470	54	69	305	38	31
30	245	45	30	550	60	89	350	50	47
31	---	---	---	480	50	65	---	---	---
TOTAL	6853	---	1053.4	14970	---	3576.6	14555	---	4859
		JULY			AUGUST			SEPTEMBER	
1	440	60	71	19	15	.77	78	7	1.5
2	490	40	53	14	12	.45	77	8	1.7
3	400	30	32	10	10	.27	76	7	1.4
4	320	25	22	8.0	6	.13	73	7	1.4
5	260	22	15	5.0	4	.05	70	7	1.3
6	220	19	11	2.0	3	.02	70	6	1.1
7	180	17	8.3	1.0	3	.01	72	6	1.2
8	190	16	8.2	.50	2	.00	81	8	1.7
9	205	14	7.7	1.0	2	.01	75	6	1.2
10	215	16	9.3	3.0	2	.02	65	5	.88
11	230	19	12	5.0	3	.04	67	5	.90
12	240	17	11	7.0	5	.09	78	7	1.5
13	220	15	8.9	10	6	.16	88	10	2.4
14	190	14	7.2	20	6	.32	100	11	3.0
15	165	13	5.8	35	7	.66	83	9	2.0
16	165	13	5.8	70	8	1.5	74	7	1.4
17	185	16	8.0	110	11	3.3	67	5	.90
18	200	21	11	190	17	8.7	68	4	.73
19	140	24	9.1	180	15	7.3	73	3	.59
20	90	20	4.9	160	13	5.6	84	5	1.1
21	60	16	2.6	135	11	4.0	76	6	1.2
22	45	13	1.6	120	10	3.2	72	5	.97
23	30	12	.97	110	9	2.7	68	4	.73
24	20	11	.59	95	7	1.8	64	3	.52
25	13	9	.32	82	6	1.3	66	4	.71
26	10	8	.22	73	6	1.2	70	6	1.1
27	10	9	.24	64	5	.86	65	5	.88
28	13	11	.39	66	5	.89	62	4	.67
29	16	12	.52	70	6	1.1	60	4	.65
30	21	15	.85	74	7	1.4	58	3	.47
31	26	16	1.1	76	7	1.4	---	---	---
TOTAL	5009	---	330.60	1815.50	---	49.25	2180	---	35.80
YEAR	53602.50		10145.28						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055270 NORTH FORK TETON RIVER AT SITE NF-F

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1977			MAY			JUNE	
1	31	11	0.92	14	20	0.76	102	12	3.3
2	35	9	0.85	13	50	1.8	104	11	3.1
3	30	8	0.65	40	105	11	194	20	10
4	29	11	0.86	37	160	16	203	40	22
5	40	30	3.2	34	65	6.0	185	35	17
6	77	85	18	29	25	2.0	161	30	13
7	127	140	48	15	18	0.73	187	23	12
8	202	200	109	6.0	13	0.21	204	18	9.9
9	357	400	386	5.0	9	0.12	212	35	20
10	307	250	207	4.0	11	0.12	189	65	33
11	267	110	79	3.0	30	0.24	168	120	54
12	223	80	48	14	80	3.0	134	80	29
13	213	60	35	65	65	11	99	40	11
14	203	70	38	84	35	7.9	104	45	13
15	212	40	23	129	40	14	68	40	7.3
16	193	36	19	162	45	20	56	25	3.8
17	184	35	17	163	35	15	61	15	2.5
18	187	34	17	173	50	23	32	14	1.2
19	191	33	17	188	65	33	32	15	1.3
20	191	32	17	190	35	18	45	10	1.2
21	171	30	14	180	25	12	60	9	1.5
22	166	35	16	164	20	8.9	59	10	1.6
23	155	50	21	153	15	6.2	85	10	2.3
24	140	30	11	195	11	5.8	67	11	2.0
25	130	20	7.0	205	25	14	39	20	2.1
26	155	35	15	205	16	8.9	19	24	1.2
27	175	70	33	190	12	6.2	19	15	0.77
28	185	160	80	165	11	4.9	16	10	0.43
29	84	90	20	150	10	4.1	33	7	0.62
30	66	25	4.5	131	11	3.9	24	5	0.32
31	---	---	---	116	12	3.8	---	---	---
TOTAL	4726	---	1305.98	3222.0	---	262.58	2961	---	280.44
		JULY			AUGUST			SEPTEMBER	
1	24	4	0.26	135	5	1.8	119	4	1.3
2	12	7	0.23	122	5	1.6	109	3	0.88
3	11	12	0.36	69	5	0.93	98	3	0.79
4	23	9	0.56	66	6	1.1	90	2	0.49
5	32	5	0.43	60	11	1.8	80	3	0.65
6	24	4	0.26	105	10	2.8	44	4	0.48
7	46	5	0.62	111	9	2.7	30	3	0.24
8	38	7	0.72	120	10	3.2	33	4	0.36
9	27	8	0.58	154	13	5.4	39	5	0.53
10	25	10	0.68	158	15	6.4	49	6	0.79
11	19	4	0.21	163	11	4.8	60	9	1.5
12	20	7	0.38	121	8	2.6	87	13	3.1
13	22	13	0.77	167	7	3.2	96	9	2.3
14	19	7	0.36	126	9	3.1	107	5	1.4
15	21	3	0.17	128	7	2.4	114	4	1.2
16	23	4	0.25	127	12	4.1	140	3	1.1
17	15	6	0.24	168	15	6.8	155	4	1.7
18	15	8	0.32	155	12	5.0	132	6	2.1
19	19	11	0.56	150	9	3.6	106	7	2.0
20	14	9	0.34	131	7	2.5	126	7	2.4
21	56	8	1.2	124	5	1.7	141	6	2.3
22	53	9	1.3	115	4	1.2	143	5	1.9
23	99	10	2.7	121	4	1.3	125	4	1.4
24	91	9	2.2	89	5	1.2	102	4	1.1
25	119	9	2.9	83	4	0.90	95	3	0.77
26	126	12	4.1	102	4	1.1	92	4	0.99
27	136	15	5.5	148	6	2.4	88	4	0.95
28	137	10	3.7	155	9	3.8	92	4	0.99
29	131	7	2.5	148	8	3.2	101	5	1.4
30	130	6	2.1	137	6	2.2	109	5	1.5
31	148	6	2.4	128	5	1.7	---	---	---
TOTAL	1675	---	38.90	3886	---	86.53	2902	---	38.61
YEAR	19372.0		2013.04						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055270 NORTH FORK TETON RIVER AT SITE NF-F (CONTINUED)

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	106	5	1.4	212	11	6.3	57	4	.62
2	105	5	1.4	222	15	9.0	52	3	.42
3	103	5	1.4	148	15	6.0	52	4	.56
4	104	5	1.4	90	12	2.9	80	8	1.7
5	101	4	1.1	62	10	1.7	102	12	3.3
6	101	4	1.1	58	8	1.3	90	20	4.9
7	99	3	.80	60	6	.97	69	25	4.7
8	99	3	.80	68	5	.92	50	13	1.8
9	100	3	.81	98	4	1.1	42	6	.68
10	101	3	.82	122	3	.99	38	3	.31
11	102	2	.55	127	3	1.0	36	2	.19
12	99	2	.53	129	5	1.7	34	1	.09
13	95	2	.51	126	8	2.7	32	2	.17
14	93	2	.50	116	12	3.8	31	4	.33
15	91	2	.49	101	11	3.0	30	6	.49
16	90	2	.49	82	8	1.8	29	10	.78
17	90	2	.49	75	6	1.2	28	15	1.1
18	87	2	.47	74	5	1.0	28	25	1.9
19	83	2	.45	73	5	.99	27	22	1.6
20	80	7	1.5	64	7	1.2	26	20	1.4
21	162	11	4.8	55	11	1.6	25	18	1.2
22	175	13	6.1	62	15	2.5	24	16	1.0
23	175	9	4.3	88	16	3.8	23	15	.93
24	178	10	4.8	72	11	2.1	22	17	1.0
25	177	11	5.3	56	8	1.2	21	8	.45
26	177	10	4.8	59	6	.96	25	4	.27
27	176	8	3.8	70	11	2.1	24	2	.13
28	177	6	2.9	86	13	3.0	24	1	.06
29	181	5	2.4	76	7	1.4	23	1	.06
30	189	6	3.1	66	5	.89	23	1	.06
31	201	8	4.3	---	---	---	24	1	.06
TOTAL	3897	---	63.61	2797	---	69.12	1191	---	32.26

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1978			FEBRUARY			MARCH	
1							---	---	---
2							---	---	---
3							---	---	---
4							---	---	---
5							---	---	---
6							---	---	---
7							---	---	---
8							---	---	---
9							---	---	---
10							---	---	---
11							---	---	---
12							---	---	---
13							---	---	---
14							---	---	---
15							---	---	---
16							---	---	---
17							---	---	---
18							---	---	---
19							---	---	---
20							---	---	---
21							---	---	---
22							---	---	---
23							---	---	---
24							---	---	---
25							---	---	---
26							---	---	---
27							---	---	---
28							---	---	---
29							---	---	---
30							395	75	80
31							455	160	197
TOTAL							850	---	277

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055270 NORTH FORK TETON RIVER AT SITE NF-F (CONTINUED)

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1978			MAY			JUNE	
1	450	400	486	350	30	28	430	85	99
2	345	210	196	370	35	35	395	60	64
3	280	90	68	415	50	56	385	90	94
4	280	66	50	470	65	82	465	250	314
5	285	56	43	450	55	67	485	500	655
6	280	55	42	380	45	46	550	380	564
7	275	55	41	300	30	24	640	280	484
8	270	52	38	240	20	13	730	200	394
9	265	42	30	225	15	9.1	850	150	344
10	260	45	32	240	20	13	955	300	774
11	260	80	56	265	45	32	880	230	546
12	265	58	41	525	95	135	695	120	225
13	250	40	27	535	100	144	600	60	97
14	255	25	17	485	60	79	430	50	58
15	255	20	14	675	130	237	560	70	106
16	245	18	12	920	470	1170	700	85	161
17	240	19	12	765	400	826	485	70	92
18	230	20	12	630	260	442	340	50	46
19	230	21	13	585	250	395	275	35	26
20	230	19	12	545	140	206	240	32	21
21	225	16	9.7	490	80	106	230	30	19
22	220	16	9.5	555	160	240	325	35	31
23	215	17	9.9	635	95	163	410	40	44
24	220	15	8.9	720	130	253	505	50	68
25	225	14	8.5	665	165	296	515	60	83
26	225	20	12	540	120	175	420	45	51
27	225	40	24	435	85	100	335	35	32
28	225	60	36	405	55	60	250	27	18
29	225	45	27	470	75	95	320	40	35
30	280	25	19	550	150	223	380	65	67
31	---	---	---	485	125	164	---	---	---
TOTAL	7735	---	1406.5	15320	---	5914.1	14780	---	5612
		JULY			AUGUST			SEPTEMBER	
1	465	90	113	86	8	1.9	124	4	1.3
2	480	75	97	75	7	1.4	120	4	1.3
3	450	55	67	61	5	.82	118	3	.96
4	405	45	49	51	4	.55	127	3	1.0
5	365	35	34	41	3	.33	143	4	1.5
6	305	25	21	35	2	.19	168	5	2.3
7	235	20	13	30	2	.16	156	7	2.9
8	230	15	9.3	27	2	.15	95	6	1.5
9	225	15	9.1	30	2	.16	91	6	1.5
10	255	18	12	33	3	.27	142	5	1.9
11	240	25	16	41	3	.33	150	6	2.4
12	225	20	12	50	4	.54	152	7	2.9
13	205	24	13	65	5	.88	177	9	4.3
14	195	22	12	85	7	1.6	198	11	5.9
15	185	19	9.5	112	9	2.7	170	9	4.1
16	180	17	8.3	146	12	4.7	158	8	3.4
17	200	15	8.1	200	15	8.1	146	7	2.8
18	260	22	15	250	20	13	148	5	2.0
19	220	25	15	255	13	9.0	158	5	2.1
20	175	20	9.5	240	9	5.8	167	7	3.2
21	140	17	6.4	220	6	3.6	156	6	2.5
22	120	14	4.5	195	4	2.1	150	5	2.0
23	100	11	3.0	170	4	1.8	142	4	1.5
24	86	9	2.1	151	5	2.0	135	6	2.2
25	71	8	1.5	135	7	2.6	132	5	1.8
26	44	7	.83	126	6	2.0	128	5	1.7
27	36	7	.68	130	6	2.1	124	4	1.3
28	68	8	1.5	130	5	1.8	118	4	1.3
29	85	10	2.3	130	5	1.8	115	3	.93
30	101	9	2.5	130	5	1.8	112	3	.91
31	97	8	2.1	125	4	1.4	---	---	---
TOTAL	6448	---	570.21	3555	---	75.58	4220	---	65.40
YEAR	60793		14085.78						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055300 NORTH FORK TETON RIVER AT SITE NF-G

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1977			MAY			JUNE	
1	8.5	23	0.53	14	20	0.76	87	20	4.7
2	9.0	15	0.36	13	15	0.53	86	19	4.4
3	10	10	0.27	30	10	0.81	180	30	15
4	17	15	0.69	27	20	1.5	190	45	23
5	32	25	2.2	24	16	1.0	170	65	30
6	60	55	8.9	18	11	0.53	145	55	22
7	110	75	22	10	8	0.22	170	60	28
8	185	110	55	6.0	15	0.24	185	70	35
9	340	300	275	5.0	9	0.12	190	80	41
10	290	210	164	4.0	30	0.32	175	85	40
11	250	130	88	3.0	25	0.20	155	65	27
12	210	80	45	14	11	0.42	120	50	16
13	200	55	30	65	18	3.2	87	45	11
14	190	60	31	84	30	6.8	66	35	6.2
15	200	40	22	118	40	13	54	30	4.4
16	180	32	16	140	50	19	40	20	2.2
17	170	31	14	145	55	22	33	15	1.3
18	175	35	17	160	55	24	16	10	0.43
19	180	31	15	175	50	24	10	7	0.19
20	180	28	14	175	47	22	10	7	0.19
21	160	26	11	160	25	11	14	10	0.38
22	155	24	10	150	15	6.1	19	13	0.67
23	145	35	14	140	12	4.5	15	8	0.32
24	130	25	8.8	180	25	12	12	6	0.19
25	120	18	5.8	190	30	15	14	8	0.30
26	150	24	9.7	190	25	13	12	9	0.29
27	170	30	14	175	17	8.0	12	8	0.26
28	180	43	21	150	16	6.5	11	9	0.27
29	84	60	14	135	15	5.5	13	10	0.35
30	11	20	0.59	115	20	6.2	19	11	0.56
31	---	---	---	100	22	5.9	---	---	---
TOTAL	4301.5	---	929.84	2915.0	---	234.35	2310	---	315.60
		JULY			AUGUST			SEPTEMBER	
1	13	8	0.28	117	9	2.8	115	6	1.9
2	12	8	0.26	106	10	2.9	105	5	1.4
3	10	11	0.30	56	12	1.8	94	5	1.3
4	12	13	0.42	35	10	0.94	86	4	0.93
5	18	9	0.44	42	9	1.0	76	4	0.82
6	14	7	0.26	51	7	0.96	40	5	0.54
7	12	5	0.16	62	8	1.3	26	6	0.42
8	12	6	0.19	75	9	1.8	29	5	0.39
9	16	8	0.35	98	14	3.7	35	4	0.38
10	15	10	0.41	106	25	7.2	45	4	0.49
11	11	6	0.18	105	20	5.7	56	3	0.45
12	11	5	0.15	105	11	3.1	75	3	0.61
13	13	7	0.25	106	10	2.9	77	2	0.42
14	9.0	6	0.15	110	9	2.7	72	2	0.39
15	10	5	0.14	113	10	3.1	63	2	0.34
16	10	8	0.22	115	18	5.6	79	3	0.64
17	11	7	0.21	128	20	6.9	85	4	0.92
18	11	7	0.21	140	15	5.7	88	5	1.2
19	10	6	0.16	115	11	3.4	90	6	1.5
20	10	6	0.16	98	8	2.1	110	7	2.1
21	34	5	0.46	91	7	1.7	125	8	2.7
22	44	7	0.83	88	9	2.1	125	7	2.4
23	56	6	0.91	82	12	2.7	105	6	1.7
24	68	6	1.1	77	9	1.9	82	5	1.1
25	87	5	1.2	71	6	1.2	76	4	0.82
26	99	5	1.3	90	4	0.97	74	4	0.80
27	112	4	1.2	130	14	4.9	73	4	0.79
28	108	6	1.7	150	11	4.5	77	4	0.83
29	103	9	2.5	140	8	3.0	86	5	1.2
30	101	13	3.5	130	8	2.8	94	5	1.3
31	130	10	3.5	125	7	2.4	---	---	---
TOTAL	1182.0	---	23.10	3057	---	93.77	2363	---	30.78
YEAR	16128.5		1627.44						

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055300 NORTH FORK TETON RIVER AT SITE NF-G (CONTINUED)

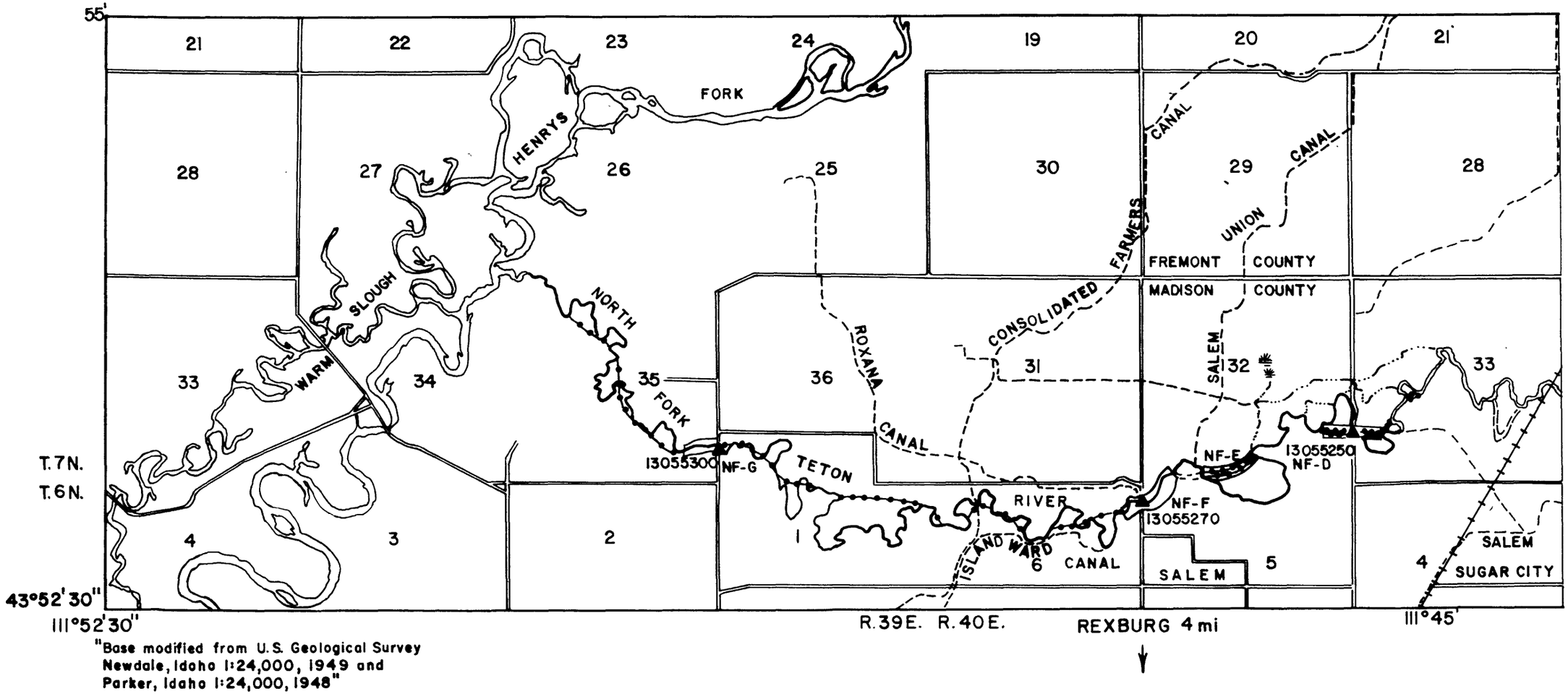
DAY	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	99	5	1.3	220	8	4.8	56	3	.45
2	105	5	1.4	225	10	6.1	50	2	.27
3	108	5	1.5	145	8	3.1	46	1	.12
4	110	4	1.2	70	6	1.1	80	1	.22
5	110	4	1.2	40	5	.54	110	9	2.7
6	108	4	1.2	32	5	.43	90	6	1.5
7	106	3	.86	30	8	.65	68	3	.55
8	105	3	.85	36	7	.68	50	1	.14
9	106	3	.86	68	5	.92	43	1	.12
10	107	2	.58	115	4	1.2	37	2	.20
11	108	2	.58	125	4	1.4	34	4	.37
12	105	2	.57	130	3	1.1	33	7	.62
13	100	1	.27	133	3	1.1	32	13	1.1
14	99	1	.27	128	2	.69	31	22	1.8
15	98	1	.26	122	2	.66	31	22	1.8
16	97	1	.26	95	1	.26	30	19	1.5
17	96	1	.26	90	1	.24	29	17	1.3
18	95	2	.51	87	1	.23	28	15	1.1
19	93	3	.75	84	1	.23	27	16	1.2
20	97	5	1.3	66	1	.18	26	18	1.3
21	155	7	2.9	51	1	.14	25	19	1.3
22	170	10	4.6	50	3	.41	24	19	1.2
23	175	7	3.3	88	10	2.4	23	18	1.1
24	180	4	1.9	76	8	1.6	22	15	.89
25	178	3	1.4	58	6	.94	21	9	.51
26	178	3	1.4	60	4	.65	20	6	.32
27	180	3	1.5	76	3	.62	19	9	.46
28	185	4	2.0	98	10	2.6	19	12	.62
29	190	4	2.1	86	9	2.1	18	7	.34
30	198	5	2.7	70	5	.94	17	4	.18
31	210	6	3.4	---	---	---	16	2	.09
TOTAL	4051	---	43.18	2754	---	38.01	1155	---	25.37

DAY	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft³/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JANUARY 1978			FEBRUARY		
1				---	---	---
2				---	---	---
3				---	---	---
4				---	---	---
5				---	---	---
6				---	---	---
7				---	---	---
8				---	---	---
9				---	---	---
10				---	---	---
11				---	---	---
12				---	---	---
13				---	---	---
14				---	---	---
15				---	---	---
16				---	---	---
17				---	---	---
18				---	---	---
19				---	---	---
20				---	---	---
21				---	---	---
22				---	---	---
23				---	---	---
24				---	---	---
25				---	---	---
26				---	---	---
27				---	---	---
28				---	---	---
29				---	---	---
30				500	70	94
31				550	110	163
TOTAL				1050	---	257

Table 4. Suspended-sediment discharge, April 1977 to September 1978 (Continued)

13055300 NORTH FORK TETON RIVER AT SITE NF-G (CONTINUED)

DAY	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (ft^3/s)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1978			MAY			JUNE	
1	490	250	331	365	32	32	410	70	77
2	370	145	145	385	44	46	390	90	95
3	310	75	63	420	55	62	380	130	133
4	295	67	53	470	70	89	450	210	255
5	295	64	51	450	55	67	475	190	244
6	292	62	49	385	40	42	500	245	331
7	290	60	47	300	30	24	580	350	548
8	280	56	42	240	20	13	670	490	886
9	265	45	32	230	16	9.9	800	480	1040
10	260	60	42	235	25	16	930	310	778
11	255	70	48	330	50	45	840	200	454
12	248	52	35	490	95	126	650	130	228
13	240	40	26	530	70	100	460	85	106
14	245	30	20	480	90	117	380	60	62
15	250	22	15	630	250	425	500	65	88
16	250	24	16	900	470	1140	690	75	140
17	248	25	17	750	440	891	420	65	74
18	245	24	16	640	300	518	300	45	36
19	250	23	16	600	210	340	250	33	22
20	245	21	14	580	175	274	220	24	14
21	235	19	12	510	150	207	210	22	12
22	228	16	9.8	580	195	305	290	30	23
23	225	14	8.5	630	120	204	370	40	40
24	230	17	11	700	150	283	500	50	67
25	240	22	14	670	170	308	510	45	62
26	237	27	17	520	130	183	430	35	41
27	234	34	21	390	100	105	390	27	28
28	232	40	25	380	75	77	250	24	16
29	232	48	30	465	110	138	300	30	24
30	280	40	30	540	160	233	370	35	35
31	---	---	---	460	90	112	---	---	---
TOTAL	7996	---	1256.3	15255	---	6531.9	13915	---	5959
		JULY			AUGUST			SEPTEMBER	
1	500	39	53	165	9	4.0	168	7	3.2
2	510	40	55	145	7	2.7	166	8	3.6
3	460	38	47	120	8	2.6	170	10	4.6
4	415	32	36	100	8	2.2	190	11	5.6
5	385	26	27	82	7	1.5	220	12	7.1
6	320	23	20	70	6	1.1	260	11	7.7
7	250	18	12	60	5	.81	235	9	5.7
8	230	12	7.5	54	5	.73	215	8	4.6
9	210	10	5.7	60	5	.81	210	6	3.4
10	285	17	13	65	5	.88	215	5	2.9
11	260	20	14	82	6	1.3	220	4	2.4
12	235	16	10	100	7	1.9	220	7	4.2
13	210	15	8.5	125	8	2.7	265	10	7.2
14	205	14	7.7	160	9	3.9	300	14	11
15	205	13	7.2	195	11	5.8	260	20	14
16	210	12	6.8	240	14	9.1	235	15	9.5
17	240	13	8.4	300	19	15	220	10	5.9
18	350	20	19	340	18	17	220	7	4.2
19	315	25	21	340	15	14	235	4	2.5
20	270	19	14	320	12	10	245	3	2.0
21	230	15	9.3	295	9	7.2	230	4	2.5
22	210	12	6.8	260	8	5.6	220	5	3.0
23	180	11	5.3	230	7	4.3	210	6	3.4
24	160	9	3.9	200	6	3.2	200	7	3.8
25	135	8	2.9	178	5	2.4	195	9	4.7
26	85	7	1.6	172	4	1.9	190	10	5.1
27	70	8	1.5	180	4	1.9	185	8	4.0
28	135	14	5.1	185	3	1.5	175	6	2.8
29	170	22	10	182	4	2.0	170	5	2.3
30	200	16	8.6	180	5	2.4	165	4	1.8
31	185	12	6.0	175	6	2.8	---	---	---
TOTAL	7825	---	453.8	5360	---	133.23	6409	---	144.7
	65770		14842.49						



"Base modified from U.S. Geological Survey Newdale, Idaho 1:24,000, 1949 and Parker, Idaho 1:24,000, 1948"

Figure 2. Locations of