

Water-Data Report 2007

06186500 YELLOWSTONE RIVER AT YELLOWSTONE LAKE OUTLET, YELLOWSTONE NATIONAL PARK

Upper Yellowstone Basin
Yellowstone Headwaters Subbasin

LOCATION.--Lat 44°34'03", long 110°22'48" referenced to North American Datum of 1927, Teton County, WY, Hydrologic Unit 10070001, Yellowstone National Park, on left bank 450 ft downstream from Fishing Bridge, 0.3 mi downstream from outlet of Yellowstone Lake, and at river mile 616.4.

DRAINAGE AREA.--991 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--December 1922 to September 1982, October 1983 to September 1986, October 1988 to current year. Prior to October 1926, gage heights only. Monthly discharge only for winter periods in water years 1927-30, 1932-33, 1935-38, 1940, 1942-46 published in WSP 1309; figures of daily discharge for these months published in Water Supply Paper (WSP) 646, 666, 686, 701, 731, 746, 786, 806, 826, 856, 896, 956, 976, 1006, 1036, and 1056, have been found to be unreliable and should not be used.

REVISED RECORDS.-- WSP 1309: See PERIOD OF RECORD. WSP 1729: Drainage area. Water Data Report MT-03-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 7,729.58 ft, referenced to the National Geodetic Vertical Datum of 1929. Prior to Oct. 2, 1928, nonrecording gage at site 450 ft upstream at elevation 1.07 ft higher.

REMARKS.--Records are good except those for estimated daily discharges, which are poor. No artificial regulation. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|--------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|
| 1 | 624 | 491 | e400 | e330 | e300 | e420 | 469 | 724 | 2,410 | 2,360 | 1,310 | 768 |
| 2 | 616 | 484 | e390 | e350 | e280 | e430 | 480 | 798 | 2,410 | 2,330 | 1,290 | 758 |
| 3 | 631 | 483 | e380 | e370 | e300 | e440 | 487 | 877 | 2,430 | 2,290 | 1,260 | 749 |
| 4 | 623 | 481 | e370 | e350 | e330 | e450 | 484 | 938 | 2,450 | 2,260 | 1,230 | 735 |
| 5 | 622 | 480 | e370 | e340 | e350 | e450 | 484 | 970 | 2,500 | 2,230 | 1,200 | 740 |
| 6 | 620 | 476 | e370 | e300 | e360 | e460 | 481 | 1,000 | 2,570 | 2,200 | 1,190 | 748 |
| 7 | 631 | 479 | e370 | e320 | e360 | e460 | 481 | 1,020 | 2,610 | 2,140 | 1,160 | 741 |
| 8 | 629 | 495 | e380 | e370 | e370 | e460 | 483 | 1,050 | 2,630 | 2,100 | 1,130 | 714 |
| 9 | 623 | 503 | e390 | e270 | e380 | e460 | 486 | 1,100 | 2,630 | 2,060 | 1,100 | 692 |
| 10 | 624 | 503 | e390 | e260 | e390 | e460 | 490 | 1,160 | 2,640 | 2,010 | 1,090 | 684 |
| 11 | 620 | 503 | e390 | e250 | e400 | e460 | 489 | 1,190 | 2,640 | 1,980 | 1,050 | 682 |
| 12 | 611 | 498 | e390 | e250 | e410 | e460 | 486 | 1,310 | 2,660 | 1,940 | 1,020 | 671 |
| 13 | 606 | 504 | e390 | e270 | e410 | e460 | 484 | 1,460 | 2,650 | 1,940 | 1,000 | 648 |
| 14 | 600 | 488 | e370 | e270 | e410 | e460 | 484 | 1,570 | 2,660 | 1,900 | 983 | 642 |
| 15 | 594 | 489 | e360 | e270 | e410 | e460 | 482 | 1,670 | 2,670 | 1,870 | 964 | 639 |
| 16 | 600 | 488 | e340 | e270 | e420 | 466 | 484 | 1,760 | 2,670 | 1,830 | 947 | 628 |
| 17 | 581 | 482 | e330 | e280 | e420 | 462 | 486 | 1,860 | 2,690 | 1,810 | 952 | 614 |
| 18 | 582 | 479 | e320 | e290 | e430 | 458 | 496 | 1,950 | 2,690 | 1,770 | 961 | 602 |
| 19 | 574 | 473 | e300 | e300 | e430 | 457 | 514 | 2,030 | 2,670 | 1,730 | 957 | 594 |
| 20 | 562 | 471 | e310 | e310 | e430 | 458 | 516 | 2,130 | 2,660 | 1,690 | 954 | 591 |
| 21 | 555 | 471 | e320 | e300 | e430 | 455 | 523 | 2,240 | 2,650 | 1,650 | 932 | 574 |
| 22 | 551 | 466 | e330 | e290 | e440 | 453 | 524 | 2,290 | 2,640 | 1,610 | 910 | 562 |
| 23 | 543 | 471 | e340 | e310 | e440 | 451 | 539 | 2,330 | 2,630 | 1,560 | 884 | 578 |
| 24 | 543 | 474 | e340 | e300 | e440 | 448 | 555 | 2,360 | 2,610 | 1,520 | 874 | 557 |
| 25 | 537 | 456 | e340 | e290 | e440 | 448 | 559 | 2,380 | 2,590 | 1,510 | 866 | 550 |
| 26 | 536 | 454 | e380 | e280 | e440 | 447 | 567 | 2,380 | 2,550 | 1,470 | 851 | 547 |
| 27 | 532 | 459 | e380 | e280 | e440 | 451 | 578 | 2,380 | 2,520 | 1,470 | 833 | 536 |
| 28 | 525 | 438 | e320 | e280 | e440 | 459 | 590 | 2,390 | 2,470 | 1,440 | 815 | 529 |
| 29 | 521 | e420 | e300 | e280 | --- | 461 | 618 | 2,390 | 2,430 | 1,400 | 798 | 521 |
| 30 | 500 | e410 | e310 | e290 | --- | 465 | 664 | 2,410 | 2,390 | 1,360 | 781 | 513 |
| 31 | 498 | --- | e320 | e310 | --- | 465 | --- | 2,410 | --- | 1,320 | 775 | --- |
| Total | 18,014 | 14,269 | 10,990 | 9,230 | 11,100 | 14,094 | 15,463 | 52,527 | 77,420 | 56,750 | 31,067 | 19,107 |
| Mean | 581 | 476 | 355 | 298 | 396 | 455 | 515 | 1,694 | 2,581 | 1,831 | 1,002 | 637 |
| Max | 631 | 504 | 400 | 370 | 440 | 466 | 664 | 2,410 | 2,690 | 2,360 | 1,310 | 768 |
| Min | 498 | 410 | 300 | 250 | 280 | 420 | 469 | 724 | 2,390 | 1,320 | 775 | 513 |
| Ac-ft | 35,730 | 28,300 | 21,800 | 18,310 | 22,020 | 27,960 | 30,670 | 104,200 | 153,600 | 112,600 | 61,620 | 37,900 |
| Cfs/m | 0.59 | 0.48 | 0.36 | 0.30 | 0.40 | 0.46 | 0.52 | 1.71 | 2.60 | 1.85 | 1.01 | 0.64 |
| In. | 0.68 | 0.54 | 0.41 | 0.35 | 0.42 | 0.53 | 0.58 | 1.97 | 2.91 | 2.13 | 1.17 | 0.72 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 2007, BY WATER YEAR (WY) *

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mean | 793 | 602 | 472 | 397 | 388 | 445 | 541 | 1,182 | 3,676 | 3,956 | 2,163 | 1,189 |
| Max | 1,259 | 984 | 775 | 699 | 637 | 717 | 801 | 2,214 | 8,574 | 7,160 | 4,031 | 1,954 |
| (WY) | (1973) | (1951) | (1951) | (1998) | (1998) | (1962) | (1952) | (1997) | (1997) | (1982) | (1982) | (1982) |
| Min | 327 | 276 | 246 | 168 | 122 | 130 | 175 | 605 | 1,707 | 1,272 | 812 | 538 |
| (WY) | (1989) | (1989) | (1932) | (1989) | (1989) | (1935) | (1937) | (1953) | (1934) | (1934) | (1934) | (1934) |

* During periods of operation (October 1926 to September 1982, October 1983 to September 1986, October 1988 to current year).

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SUMMARY STATISTICS

| | Calendar Year 2006 | | Water Year 2007 | | Water Years 1927 - 2007* | |
|--------------------------|--------------------|--------|-----------------|--------|--------------------------|--------------|
| Annual total | 472,203 | | 330,031 | | | |
| Annual mean | 1,294 | | 904 | | 1,322 | |
| Highest annual mean | | | | | 2,253 | 1997 |
| Lowest annual mean | | | | | 682 | 1934 |
| Highest daily mean | 5,140 | Jun 15 | 2,690 | Jun 17 | 9,930 | Jun 19, 1997 |
| Lowest daily mean | 300 | Dec 19 | 250 | Jan 11 | 100 | Feb 18, 1993 |
| Annual seven-day minimum | 321 | Dec 16 | 263 | Jan 9 | 113 | Feb 11, 1989 |
| Maximum peak flow | | | 2,750 | Jun 16 | 9,950 | Jun 18, 1997 |
| Maximum peak stage | | | 5.06 | Jun 16 | 8.90 | Jun 18, 1997 |
| Instantaneous low flow | | | 250 | Jan 11 | | |
| Annual runoff (ac-ft) | 936,600 | | 654,600 | | 957,700 | |
| Annual runoff (cfsm) | 1.31 | | 0.912 | | 1.33 | |
| Annual runoff (inches) | 17.73 | | 12.39 | | 18.12 | |
| 10 percent exceeds | 3,930 | | 2,380 | | 3,440 | |
| 50 percent exceeds | 582 | | 536 | | 673 | |
| 90 percent exceeds | 458 | | 326 | | 340 | |

* During periods of operation (October 1926 to September 1982, October 1983 to September 1986, October 1988 to current year).

