

Water-Data Report 2007

## **07077500 CACHE RIVER AT PATTERSON, AR**

White Basin  
Cache Subbasin

LOCATION.--Lat 35°16'11", long 91°14'11" referenced to North American Datum of 1983, in SE ¼ SE ¼ sec.31, T.8 N., R.2 W., Woodruff County, AR, Hydrologic Unit 08020302, at bridge on U.S. Hwy 64 at Patterson, 10.9 mi upstream from Maple Slough, and at river mile 77.2.

DRAINAGE AREA.--1,037 mi<sup>2</sup>.

### **SURFACE-WATER RECORDS**

PERIOD OF RECORD.--Oct 1927 to Sep 1931, Feb 1937, Aug 1937 to Sep 1960, Oct 1965 to Sep 1977, Oct 1997 to current year in reports of the U.S. Geological Survey. Monthly discharge only for some periods, published in WSP 1311 and WSP 1731. Jan 1947 to Dec 1963 in reports of the Mississippi River Commission. Jan 1964 to date in reports of the U.S. Army Corps of Engineers, Memphis District. Gage height records Jul 11, 1916, to Dec 31, 1931, are contained in reports of the National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 182.96 ft above NGVD of 1929. Prior to Oct 3, 1966, nonrecording and recording gages at or within 1,000 ft of old U.S. Hwy 64 crossing, 1.4 mi downstream as follows: Prior to 1931, nonrecording gage at datum 183.17 ft above NGVD of 1929; Jan 1937 to Oct 5, 1949, nonrecording gage; and Oct 6, 1949, to Dec 31, 1950, water-stage recorder at mean Gulf level, or 0.24 ft below sea level; Jan 1, 1950 to Oct 2, 1966, water-stage recorder at present datum.

COOPERATION.--U.S. Army Corps of Engineers.

REMARKS.--Water-discharge records poor including estimated daily discharges. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr 19, 1927, reached a stage of 16.1 ft, present datum, from floodmarks, discharge, 24,500 ft<sup>3</sup>/s, due to break in White River levee.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,240 ft<sup>3</sup>/s, Jan 18, gage height, 10.94 ft; minimum discharge, 20 ft<sup>3</sup>/s, Jun 3, gage height, 2.85 ft.

## 07077500 CACHE RIVER AT PATTERSON, AR—Continued

**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            | 2,510   | 3,160   | 578    | 2,500   | 3,820  | 1,660  | 79     | 299    | 24     | 609    | 212    | 277    |
| 2            | 2,540   | 3,490   | 483    | 2,180   | 3,650  | 2,000  | 126    | 246    | 23     | 746    | 264    | 266    |
| 3            | 2,520   | 3,530   | 438    | 1,970   | 3,310  | 2,060  | 315    | 224    | 21     | 947    | 312    | 252    |
| 4            | 2,500   | 3,450   | 473    | 1,990   | 2,740  | 1,910  | 420    | 239    | 26     | 1,170  | 339    | 243    |
| 5            | 2,440   | 3,290   | 714    | 1,980   | 2,170  | 1,620  | 388    | 299    | 39     | 1,660  | 328    | 291    |
| 6            | 2,380   | 3,080   | 1,290  | 1,770   | 1,780  | 1,300  | 322    | 458    | 51     | 2,180  | 300    | 487    |
| 7            | 2,330   | 2,680   | 1,790  | 1,570   | 1,500  | 1,030  | 252    | 824    | 54     | 2,520  | 276    | 722    |
| 8            | 2,300   | 2,330   | 1,830  | 1,520   | 1,320  | 832    | 325    | 1,360  | 49     | 2,590  | 256    | 789    |
| 9            | 2,280   | 2,020   | 1,570  | 1,570   | 1,180  | 682    | 977    | 1,710  | 51     | 2,270  | 234    | 915    |
| 10           | 2,250   | 1,880   | 1,210  | 1,620   | 1,060  | 571    | 1,800  | 1,780  | 50     | 1,770  | 212    | 1,690  |
| 11           | 2,220   | 2,180   | 922    | 1,780   | 956    | 480    | e1,450 | 1,590  | 68     | 1,340  | 197    | 2,150  |
| 12           | 2,180   | 2,630   | 731    | 1,900   | 862    | 406    | e651   | 1,310  | 115    | 1,050  | 181    | 2,190  |
| 13           | 2,150   | 2,810   | 583    | 2,000   | 784    | 352    | e361   | 1,160  | 171    | 824    | 168    | 2,390  |
| 14           | 2,120   | 2,760   | 495    | 2,680   | 701    | 316    | e265   | 949    | 209    | 643    | 164    | 2,480  |
| 15           | 2,080   | 2,680   | 471    | 3,540   | 627    | 274    | e289   | 763    | 217    | 531    | 167    | 2,300  |
| 16           | 2,080   | 2,610   | 619    | 4,400   | 569    | 227    | e400   | 706    | 207    | 463    | 170    | 2,000  |
| 17           | 1,970   | 2,590   | 1,050  | 5,060   | e650   | 188    | e508   | 679    | 212    | 404    | 173    | 1,660  |
| 18           | 1,690   | 2,490   | 1,440  | 5,210   | 955    | 159    | e665   | 594    | 183    | 352    | 180    | 1,330  |
| 19           | 1,460   | 2,550   | 1,400  | 4,970   | 1,330  | 138    | e763   | 465    | 171    | 302    | 187    | 1,040  |
| 20           | 1,390   | 3,090   | 1,170  | 4,480   | 1,360  | 122    | 756    | 345    | 172    | 260    | 195    | 794    |
| 21           | 1,840   | 3,440   | 952    | 4,300   | 1,200  | 110    | 641    | 273    | 153    | 221    | 199    | 585    |
| 22           | 2,400   | 3,450   | 763    | 4,290   | 981    | 101    | 478    | 229    | 153    | 186    | 217    | 421    |
| 23           | 2,640   | 3,210   | 647    | 4,270   | 801    | 91     | 335    | 186    | 164    | 163    | 241    | 310    |
| 24           | 2,730   | 2,730   | 571    | 4,160   | 701    | 83     | 235    | 142    | 193    | 147    | 247    | 240    |
| 25           | 2,710   | 2,240   | 600    | 4,080   | 677    | 75     | 202    | 105    | 301    | 131    | 246    | 195    |
| 26           | 2,530   | 1,800   | 892    | 4,020   | 657    | 70     | 267    | 78     | 360    | 124    | 251    | 163    |
| 27           | 2,170   | 1,420   | 1,270  | 4,000   | 672    | 69     | 380    | 60     | 391    | 137    | 253    | 139    |
| 28           | 1,810   | 1,120   | 1,340  | 4,000   | 962    | 70     | 423    | 46     | 462    | 157    | 252    | 114    |
| 29           | 1,640   | 883     | 1,440  | 3,990   | ---    | 64     | 404    | 37     | 566    | 169    | 255    | 92     |
| 30           | 1,770   | 696     | 1,880  | 3,930   | ---    | 64     | 358    | 31     | 627    | 170    | 263    | 93     |
| 31           | 2,380   | ---     | 2,410  | 3,880   | ---    | 74     | ---    | 27     | ---    | 178    | 274    | ---    |
| <b>Total</b> | 68,010  | 76,289  | 32,022 | 99,610  | 37,975 | 17,198 | 14,835 | 17,214 | 5,483  | 24,414 | 7,213  | 26,618 |
| <b>Mean</b>  | 2,194   | 2,543   | 1,033  | 3,213   | 1,356  | 555    | 494    | 555    | 183    | 788    | 233    | 887    |
| <b>Max</b>   | 2,730   | 3,530   | 2,410  | 5,210   | 3,820  | 2,060  | 1,800  | 1,780  | 627    | 2,590  | 339    | 2,480  |
| <b>Min</b>   | 1,390   | 696     | 438    | 1,520   | 569    | 64     | 79     | 27     | 21     | 124    | 164    | 92     |
| <b>Ac-ft</b> | 134,900 | 151,300 | 63,520 | 197,600 | 75,320 | 34,110 | 29,430 | 34,140 | 10,880 | 48,430 | 14,310 | 52,800 |

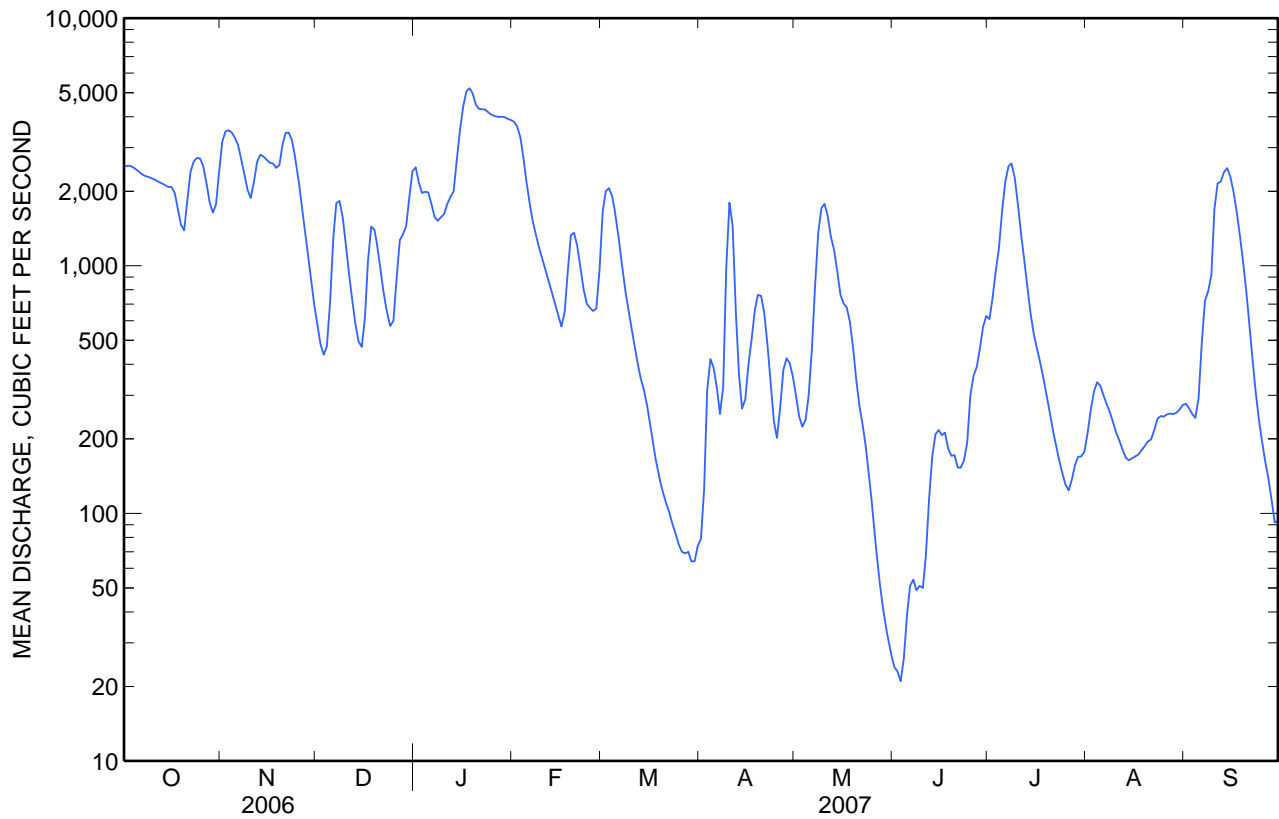
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2007, BY WATER YEAR (WY)

|             | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Mean</b> | 413    | 758    | 1,528  | 1,966  | 2,106  | 2,160  | 1,912  | 1,563  | 855    | 505    | 468    | 449    |
| <b>Max</b>  | 3,100  | 5,297  | 6,168  | 8,809  | 8,817  | 5,770  | 7,586  | 6,075  | 5,890  | 2,093  | 3,009  | 2,210  |
| <b>(WY)</b> | (1985) | (1958) | (1958) | (1950) | (1950) | (1945) | (1979) | (1973) | (1928) | (1945) | (1998) | (1965) |
| <b>Min</b>  | 8.32   | 11.3   | 25.5   | 37.8   | 68.6   | 168    | 121    | 150    | 67.7   | 57.6   | 47.1   | 45.5   |
| <b>(WY)</b> | (1988) | (2006) | (2006) | (1964) | (1963) | (1941) | (2006) | (1941) | (1941) | (1954) | (1944) | (1943) |

## 07077500 CACHE RIVER AT PATTERSON, AR—Continued

## SUMMARY STATISTICS

|                                 | Calendar Year 2006 |        | Water Year 2007 |        | Water Years 1928 - 2007 |              |
|---------------------------------|--------------------|--------|-----------------|--------|-------------------------|--------------|
| <b>Annual total</b>             | 331,398            |        | 426,881         |        |                         |              |
| <b>Annual mean</b>              | 908                |        | 1,170           |        | 1,223                   |              |
| <b>Highest annual mean</b>      |                    |        |                 |        | 2,984                   |              |
| <b>Lowest annual mean</b>       |                    |        |                 |        | 308                     |              |
| <b>Highest daily mean</b>       | 3,530              | Nov 3  | 5,210           | Jan 18 | 12,100                  | Jun 27, 1928 |
| <b>Lowest daily mean</b>        | 23                 | Jun 1  | 21              | Jun 3  | 0.00                    | Oct 27, 1956 |
| <b>Annual seven-day minimum</b> | 25                 | Jun 11 | 27              | May 29 | 0.00                    | Oct 24, 1978 |
| <b>Maximum peak flow</b>        |                    |        | 5,240           | Jan 18 | 13,200                  | Jan 24, 1937 |
| <b>Maximum peak stage</b>       |                    |        | 10.94           | Jan 18 | <sup>a</sup> 13.21      | Jan 24, 1937 |
| <b>Instantaneous low flow</b>   |                    |        | 20              | Jun 3  | 0.00                    | Oct 27, 1956 |
| <b>Annual runoff (ac-ft)</b>    | 657,300            |        | 846,700         |        | 886,200                 |              |
| <b>10 percent exceeds</b>       | 2,390              |        | 2,690           |        | 3,560                   |              |
| <b>50 percent exceeds</b>       | 649                |        | 696             |        | 448                     |              |
| <b>90 percent exceeds</b>       | 33                 |        | 125             |        | 66                      |              |

<sup>a</sup> At present datum

## 07077500 CACHE RIVER AT PATTERSON, AR—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Oct 1952 to May 1955, Oct 1975 to current year.

WATER-QUALITY DATA  
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 1 of 4

[Remark codes: &lt;, less than; E, estimated.]

| Date         | Time | Agency<br>ana-<br>lyzing<br>sample,<br>code<br>(00028) | Instan-<br>taneous<br>dis-<br>charge,<br>cfs<br>(00061) | Sam-<br>pling<br>method,<br>code<br>(82398) | Baro-<br>metric<br>pres-<br>sure,<br>mm Hg<br>(00025) | Dis-<br>solved<br>oxygen,<br>mg/L<br>(00300) | Dis-<br>solved<br>oxygen,<br>percent<br>of sat-<br>uration<br>(00301) | pH,<br>water,<br>unfltrd<br>field,<br>std<br>units<br>(00400) | Specif-<br>ic<br>conduc-<br>tance,<br>wat unf<br>µS/cm<br>25 degC<br>(00095) | Temper-<br>ature,<br>water,<br>deg C<br>(00010) | Hard-<br>ness,<br>water,<br>mg/L as<br>CaCO3<br>(00900) | Calcium<br>water,<br>fltrd,<br>mg/L<br>(00915) | Magnes-<br>ium,<br>water,<br>fltrd,<br>mg/L<br>(00925) |
|--------------|------|--|---|---|---|--|---|---|--|---|---|--|--|
| Nov<br>02... | 1030 | 80020  | 3,490   | 30  | 770   | 5.6  | 51  | 7.1   | 144  | 11.8  | 41  | 10.2   | 3.80   |
| Dec<br>13... | 1035 | 80020  | 587   | 70  | 777   | 9.7  | 77  | 6.9   | 133  | 6.4   | 40  | 9.85   | 3.84   |
| Mar<br>21... | 0945 | --   | 110   | 10  | 770   | 7.4  | 75  | 7.1   | 124  | 16.3  | 40  | 10.1   | 3.65   |
| Apr<br>24... | 1120 | --   | 236   | 10  | 775   | 6.0  | 65  | 6.9   | 123  | 19.9  | 36  | 9.09   | 3.32   |
| Jun<br>20... | 1000 | --   | 175   | 10  | 770   | 4.5  | 56  | 7.7   | 360  | 27.2  | 140   | 34.9   | 12.3   |
| Aug<br>23... | 1015 | --   | 240   | 10  | 767   | 5.2  | 70  | 8.0   | 492  | 30.9  | 240   | 62.1   | 19.9   |

WATER-QUALITY DATA  
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 2 of 4

[Remark codes: &lt;, less than; E, estimated.]

| Date         | Potas-<br>sium,<br>water,<br>fltrd,<br>mg/L<br>(00935) | Sodium<br>adsorp-<br>tion<br>ratio<br>(00931) | Sodium<br>frac-<br>tion<br>of<br>cations<br>percent<br>(00932) | Sodium,<br>water,<br>fltrd,<br>mg/L<br>(00930) | Chlor-<br>ide,<br>water,<br>fltrd,<br>mg/L<br>(00940) | Fluor-<br>ide,<br>water,<br>fltrd,<br>mg/L<br>(00950) | Sulfate<br>water,<br>fltrd,<br>mg/L<br>(00945) | Residue<br>on<br>evap.<br>at<br>180degC<br>wat flt<br>mg/L<br>(70300) | Ammonia<br>+<br>org-N,<br>water,<br>unfltrd<br>mg/L<br>as N<br>(00625) | Ammonia<br>water,<br>fltrd,<br>mg/L<br>as N<br>(71846) | Ammonia<br>water,<br>fltrd,<br>mg/L<br>as N<br>(00608) | Nitrate<br>water,<br>fltrd,<br>mg/L<br>as N<br>(71851) | Nitrate<br>water,<br>fltrd,<br>mg/L<br>as N<br>(00618) |
|--------------|--|---|--|--|---|---|--|---|--|--|--|--|--|
| Nov<br>02... | 6.43   | .4  | 19   | 5.18   | 7.17  | .12   | 8.30   | 103   | .80  | --   | <.020  | --   | --   |
| Dec<br>13... | 5.23   | .4  | 23   | 6.42   | 6.71  | .11   | 6.72   | 82  | 1.0  | .03  | .026   | .751   | .17  |
| Mar<br>21... | 3.74   | .4  | 22   | 5.86   | 4.14  | E.09  | 5.58   | 79  | 1.3  | .07  | .052   | 1.54   | .35  |
| Apr<br>24... | 4.19   | .5  | 26   | 6.73   | 6.51  | .13   | 13.0   | 86  | 1.5  | .08  | .059   | 4.16   | .94  |
| Jun<br>20... | 5.17   | .8  | 24   | 20.4   | 13.2  | .26   | 40.5   | 236   | 1.2  | .12  | .091   | 2.58   | .58  |
| Aug<br>23... | 3.21   | .7  | 18   | 24.6   | 13.6  | .26   | 49.1   | 366   | 1.0  | --   | E.014  | .459   | .10  |

## 07077500 CACHE RIVER AT PATTERSON, AR—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 3 of 4

[Remark codes: &lt;, less than; E, estimated.]

| Date                       | Nitrite<br>+<br>nitrate<br>water<br>fltrd,<br>mg/L<br>as N<br>(00631) | Nitrite<br>water,<br>fltrd,<br>mg/L<br>(71856) | Nitrite<br>water,<br>fltrd,<br>mg/L<br>as N<br>(00613) | Organic<br>nitro-<br>gen,<br>water,<br>unfltrd<br>mg/L<br>(00605) | Total<br>nitro-<br>gen,<br>water,<br>unfltrd<br>mg/L<br>(00600) | Ortho-<br>phos-<br>phate,<br>water,<br>fltrd,<br>mg/L<br>(00660) | Ortho-<br>phos-<br>phate,<br>water,<br>fltrd,<br>mg/L<br>as P<br>(00671) | Phos-<br>phorus,<br>water,<br>fltrd,<br>mg/L<br>(00666) | Phos-<br>phorus,<br>water,<br>unfltrd<br>mg/L<br>(00665) | E coli,<br>m-TEC<br>MF,<br>water,<br>col/<br>100 mL<br>(31633) | Fecal<br>coli-<br>form,<br>M-FC<br>col/<br>100 mL<br>(31625) | Suspd.<br>sedi-<br>ment,<br>sieve<br>diametr<br>percent<br><.063mm<br>(70331) | Sus-<br>pended<br>sedi-<br>ment<br>concen-<br>tration<br>mg/L<br>(80154) |
|----------------------------|---|--|--|---|---|--|--|---|--|--|--|---|--|
| <b>Nov</b><br><b>02...</b> | E.04  | --   | <.002  | --  | --  | .431   | .141   | .14   | .24  | 77   | 77   | 62  | 10   |
| <b>Dec</b><br><b>13...</b> | .17   | .017   | .005   | .97   | 1.2   | .170   | .056   | .09   | .23  | E46  | E46  | 98  | 43   |
| <b>Mar</b><br><b>21...</b> | .36   | .031   | .010   | 1.2   | 1.6   | .165   | .054   | .06   | .32  | 150  | 160  | 97  | 111  |
| <b>Apr</b><br><b>24...</b> | .96   | .054   | .017   | 1.4   | 2.4   | .135   | .044   | .06   | .37  | 84   | 170  | 99  | 202  |
| <b>Jun</b><br><b>20...</b> | .63   | .152   | .046   | 1.1   | 1.8   | .176   | .057   | .07   | .18  | 260  | 210  | 96  | 70   |
| <b>Aug</b><br><b>23...</b> | .11   | .011   | .003   | --  | 1.1   | .428   | .140   | .12   | .23  | 87   | 80   | 87  | 35   |

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2006**  
**TO SEPTEMBER 2007**

Part 4 of 4

[Remark codes: <, less than;  
E, estimated.]

| Date                       | Sus-<br>pended<br>sedi-<br>ment<br>dis-<br>charge,<br>tons/d<br>(80155) | Sampler<br>type,<br>code<br>(84164) |
|----------------------------|---|-------------------------------------|
| <b>Nov</b><br><b>02...</b> | 94  | 8010                                |
| <b>Dec</b><br><b>13...</b> | 68  | 3070                                |
| <b>Mar</b><br><b>21...</b> | 33  | 3070                                |
| <b>Apr</b><br><b>24...</b> | 129   | 3070                                |
| <b>Jun</b><br><b>20...</b> | 33  | 3070                                |
| <b>Aug</b><br><b>23...</b> | 23  | 3070                                |