Water-Data Report 2007

# 14231000 COWLITZ RIVER AT RANDLE, WA

Lower Columbia Basin
Upper Cowlitz Subbasin

LOCATION.--Lat 46°31′57″, long 121°57′20″ referenced to North American Datum of 1927, in NW ¼ NE ¼ sec.17, T.12 N., R.7 E., Lewis County, WA, Hydrologic Unit 17080004, on left bank on upstream side of Cispus Road bridge in the town of Randle, and at mile 102.9.

DRAINAGE AREA.--541 $mi^2$.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1910 to December 1911, October 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 900 ft above NGVD of 1929 from topographic map. October 1910 to December 1911, nonrecording gage at same site at different datum.

REMARKS.--Records good except for estimated daily discharges and the period Oct. 1 to Nov. 3, which are fair. Small diversions for domestic use and irrigation upstream from station. Minor regulation by Packwood Lake for power production. U.S. Geological Survey satellite telemeter at station. Due to bank overflow, discharges above 19.00 ft gage height cannot be determined by direct methods.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--14 years (water years 1994-2007), 2,840 $ft^3/s$, 71.31 in/yr, 2,057,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 25.24 ft, Nov. 7, 2006; minimum daily discharge, 278 $ft^3/s$, Nov. 3, 4, 2002.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 19,900 $ft^3/s$ and (or) maximum (*):

| Date | Time | Discharge ($ft^3/s$) | Gage height (ft) |
|---|---|---|---|
| Nov 7 | 1415 | Unknown | *25.24 |
| No other peak greater than base discharge | | | |

Minimum daily discharge, 394 $ft^3/s$, Oct. 12.

**14231000 COWLITZ RIVER AT RANDLE, WA—Continued**

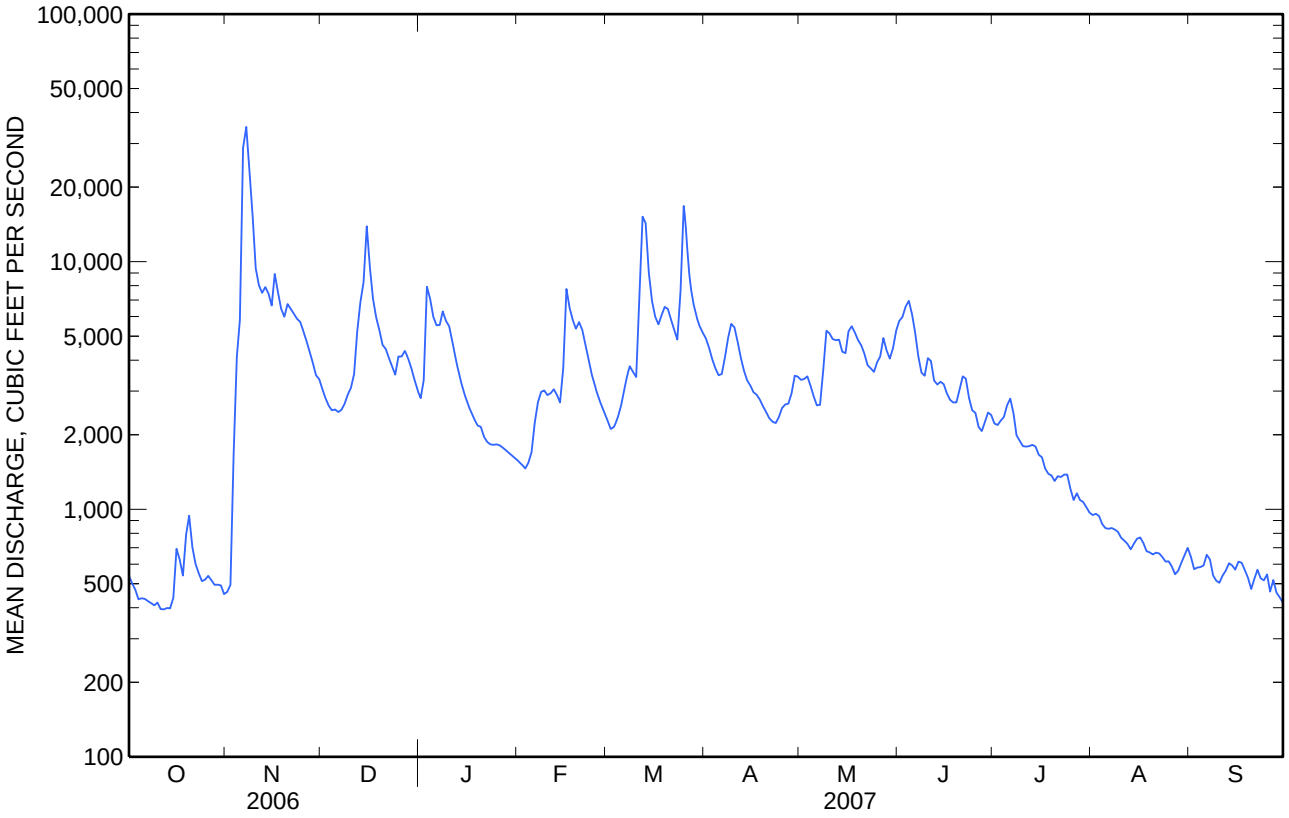
**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**
**DAILY MEAN VALUES**
[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 537 | 464 | 3,050 | 2,810 | 1,560 | 2,270 | 4,890 | 3,330 | 5,760 | 2,220 | 947 | 642 |
| 2 | 502 | 495 | 2,810 | 3,320 | 1,510 | 2,110 | 4,480 | 3,360 | 5,980 | 2,190 | 958 | 573 |
| 3 | 472 | 1,670 | 2,620 | 7,920 | 1,460 | 2,150 | 4,040 | 3,440 | 6,580 | 2,280 | 939 | 581 |
| 4 | 433 | 4,130 | 2,510 | 7,080 | 1,540 | 2,300 | 3,710 | 3,150 | 6,950 | 2,360 | 873 | 584 |
| 5 | 437 | 5,820 | 2,530 | 5,990 | 1,700 | 2,580 | 3,480 | 2,860 | 6,130 | 2,630 | 840 | 593 |
| 6 | 434 | e28,800 | 2,470 | 5,530 | 2,240 | 2,920 | 3,520 | 2,630 | 5,190 | 2,800 | 833 | e655 |
| 7 | 425 | e35,000 | 2,520 | 5,550 | 2,710 | 3,380 | 4,120 | 2,640 | 4,160 | 2,440 | 839 | e626 |
| 8 | 417 | e23,200 | 2,660 | 6,300 | 2,980 | 3,780 | 4,940 | 3,650 | 3,560 | 1,990 | 827 | e540 |
| 9 | 409 | 15,200 | 2,900 | 5,770 | 3,020 | 3,590 | 5,610 | 5,260 | 3,460 | 1,890 | 810 | e514 |
| 10 | 420 | 9,410 | 3,090 | 5,480 | 2,890 | 3,420 | 5,430 | 5,140 | 4,080 | 1,800 | 767 | e505 |
| 11 | 395 | 8,030 | 3,520 | 4,810 | 2,940 | 7,240 | 4,750 | 4,870 | 3,970 | 1,790 | 746 | e540 |
| 12 | 394 | 7,490 | 5,190 | 4,070 | 3,050 | 15,200 | 4,090 | 4,820 | 3,310 | 1,800 | 724 | e565 |
| 13 | 399 | 7,900 | 6,840 | 3,560 | 2,890 | 14,300 | 3,620 | 4,840 | 3,190 | 1,820 | 689 | e605 |
| 14 | 398 | 7,430 | 8,270 | 3,180 | 2,700 | 9,010 | 3,320 | 4,330 | 3,270 | 1,790 | 725 | e593 |
| 15 | 439 | 6,650 | 13,900 | 2,870 | 3,710 | 6,930 | 3,160 | 4,270 | 3,200 | 1,660 | 760 | e570 |
| 16 | 692 | 8,920 | 9,430 | 2,660 | 7,760 | 5,990 | 2,970 | 5,240 | 2,950 | 1,620 | 769 | e614 |
| 17 | 625 | 7,530 | 7,080 | 2,460 | 6,500 | 5,580 | 2,900 | 5,480 | 2,770 | 1,460 | 730 | e608 |
| 18 | 540 | 6,450 | 5,950 | 2,290 | 5,800 | 6,060 | 2,770 | 5,170 | 2,700 | 1,390 | 677 | e568 |
| 19 | 790 | 6,000 | 5,280 | 2,180 | 5,360 | 6,570 | 2,610 | 4,820 | 2,700 | 1,370 | 670 | e528 |
| 20 | 942 | 6,740 | 4,610 | 2,150 | 5,700 | 6,440 | 2,470 | 4,590 | 3,040 | 1,300 | 657 | e476 |
| 21 | 703 | 6,460 | 4,440 | 1,960 | 5,300 | 5,830 | 2,330 | 4,250 | 3,440 | 1,360 | 668 | e522 |
| 22 | 601 | 6,170 | 4,070 | 1,870 | 4,610 | 5,290 | 2,260 | 3,820 | 3,370 | 1,350 | 663 | e569 |
| 23 | 551 | 5,880 | 3,780 | 1,830 | 4,010 | 4,850 | 2,230 | 3,710 | 2,820 | 1,380 | 640 | e526 |
| 24 | 512 | 5,710 | 3,500 | 1,820 | 3,490 | 7,580 | 2,360 | 3,590 | 2,510 | 1,380 | 614 | e516 |
| 25 | 520 | 5,240 | 4,140 | 1,830 | 3,160 | 16,800 | 2,560 | 3,930 | 2,450 | 1,210 | 616 | e545 |
| 26 | 538 | 4,770 | 4,140 | 1,810 | 2,870 | 11,800 | 2,650 | 4,140 | 2,150 | 1,090 | 587 | e465 |
| 27 | 517 | 4,360 | 4,360 | 1,770 | 2,620 | 8,340 | 2,670 | 4,910 | 2,070 | 1,160 | 546 | e518 |
| 28 | 495 | 3,880 | 4,090 | 1,730 | 2,460 | 6,840 | 2,940 | 4,380 | 2,250 | 1,090 | 565 | e460 |
| 29 | 496 | 3,480 | 3,740 | 1,680 | --- | 6,010 | 3,460 | 4,060 | 2,460 | 1,070 | 610 | e441 |
| 30 | 492 | 3,350 | 3,350 | 1,640 | --- | 5,500 | 3,430 | 4,470 | 2,400 | 1,020 | 654 | e419 |
| 31 | 454 | --- | 3,050 | 1,600 | --- | 5,170 | --- | 5,270 | --- | 970 | 698 | --- |
| Total | 15,979 | 246,629 | 139,890 | 105,520 | 96,540 | 195,830 | 103,770 | 130,420 | 108,870 | 51,680 | 22,641 | 16,461 |
| Mean | 515 | 8,221 | 4,513 | 3,404 | 3,448 | 6,317 | 3,459 | 4,207 | 3,629 | 1,667 | 730 | 549 |
| Max | 942 | 35,000 | 13,900 | 7,920 | 7,760 | 16,800 | 5,610 | 5,480 | 6,950 | 2,800 | 958 | 655 |
| Min | 394 | 464 | 2,470 | 1,600 | 1,460 | 2,110 | 2,230 | 2,630 | 2,070 | 970 | 546 | 419 |
| Ac-ft | 31,690 | 489,200 | 277,500 | 209,300 | 191,500 | 388,400 | 205,800 | 258,700 | 215,900 | 102,500 | 44,910 | 32,650 |
| Cfsm | 0.95 | 15.2 | 8.34 | 6.29 | 6.37 | 11.7 | 6.39 | 7.78 | 6.71 | 3.08 | 1.35 | 1.01 |
| In. | 1.10 | 16.96 | 9.62 | 7.26 | 6.64 | 13.47 | 7.14 | 8.97 | 7.49 | 3.55 | 1.56 | 1.13 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2007, BY WATER YEAR (WY)**

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 1,253 | 3,441 | 3,655 | 3,910 | 3,356 | 3,021 | 3,240 | 4,305 | 3,994 | 2,092 | 1,039 | 817 |
| Max | 3,690 | 9,466 | 6,632 | 6,669 | 8,136 | 6,317 | 4,737 | 6,748 | 6,662 | 4,822 | 2,382 | 1,781 |
| (WY) | (1998) | (1996) | (1996) | (2006) | (1996) | (2007) | (2002) | (1997) | (1999) | (1999) | (1999) | (2004) |
| Min | 410 | 365 | 930 | 1,391 | 1,323 | 1,411 | 2,132 | 3,168 | 1,808 | 1,065 | 669 | 549 |
| (WY) | (2003) | (1994) | (2001) | (2001) | (1994) | (2005) | (1998) | (2003) | (2005) | (2005) | (2005) | (2007) |

**14231000 COWLITZ RIVER AT RANDLE, WA—Continued**

**SUMMARY STATISTICS**

| | Calendar Year 2006 | | Water Year 2007 | | Water Years 1994 - 2007 | |
|---|---|---|---|---|---|---|
| **Annual total** | 1,317,223 | | 1,234,230 | | | |
| **Annual mean** | 3,609 | | 3,381 | | 2,840 | |
| **Highest annual mean** | | | | | 3,982 | 1996 |
| **Lowest annual mean** | | | | | 1,573 | 2001 |
| **Highest daily mean** | 35,000 | Nov 7 | 35,000 | Nov 7 | 35,000 | Feb 9, 1996 |
| **Lowest daily mean** | 394 | Oct 12 | 394 | Oct 12 | 278 | Nov 3, 2002 |
| **Annual seven-day minimum** | 405 | Oct 8 | 405 | Oct 8 | 281 | Oct 31, 2002 |
| **Annual runoff (ac-ft)** | 2,613,000 | | 2,448,000 | | 2,057,000 | |
| **Annual runoff (cfsm)** | 6.67 | | 6.25 | | 5.25 | |
| **Annual runoff (inches)** | 90.57 | | 84.87 | | 71.31 | |
| **10 percent exceeds** | 7,080 | | 6,450 | | 5,530 | |
| **50 percent exceeds** | 2,690 | | 2,770 | | 2,230 | |
| **90 percent exceeds** | 602 | | 538 | | 663 | |