Water-Data Report 2011

# 03270000 MAD RIVER NEAR DAYTON OH

Great Miami Basin
Upper Great Miami Subbasin

LOCATION.--Lat 39°47′50″, long 84°05′19″ referenced to North American Datum of 1927, Greene County, OH, Hydrologic Unit 05080001, on left bank in retarding basin 300 ft upstream from Huffman Dam, 2.3 mi downstream from Mud Run, 6.2 mi northeast of Dayton, and at mile 6.1.

DRAINAGE AREA.--635 $mi^2$.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1914 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 453: 1915. WSP 743: 1929-32. WSP 1305: 1916(M), 1925(M) 1930-32(M). WSP 1908: Drainage area. WDR-OH-82-1: 1980.

GAGE.--Water-stage recorder. Datum of gage is 777.06 ft NGVD 1929. Jan. 21, 1959-Dec. 14, 1967, at site 900 ft downstream at datum 77.01 ft lower. See WSP 1725 for history of changes prior to Jan. 21, 1959. Water-quality data collected at this site 1947-1948, 1962-1963, 1966-1980.

COOPERATION.--Base data furnished by Miami Conservancy District.

REMARKS.--Records good. Flood flows affected by backwater from Huffman retarding dam beginning in 1921, some regulation by C. J. Brown Reservoir 26 mi upstream on Buck Creek since 1974. Water-quality data was formerly collected on left bank 900 ft downstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 $ft^3/s$ Jan. 22, 1959 (based on Huffman retarding basin outflow records); maximum gage height, 87.9 ft Feb. 26, 1929, at site and datum then in use; minimum daily discharge, 94 $ft^3/s$ Aug. 6, 1934, but may have been less during 1921-1924.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 25, 1913, reached a stage of 14.0 ft, original site and datum; discharge 75,700 $ft^3/s$, computed by Miami Conservancy District.

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**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**
**DAILY MEAN VALUES**

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 242 | 320 | 1,330 | 776 | 383 | 3,880 | 737 | 1,840 | 1,630 | 694 | 545 | 314 |
| 2 | 299 | 248 | 873 | 987 | 521 | 2,230 | 725 | 3,540 | 1,280 | 678 | 504 | 300 |
| 3 | 325 | 232 | 705 | 654 | 464 | 1,730 | 695 | 6,140 | 1,250 | 670 | 527 | 291 |
| 4 | 268 | 230 | 636 | 543 | 428 | 1,680 | 1,270 | 6,060 | 1,290 | 683 | 500 | 811 |
| 5 | 244 | 229 | 475 | 487 | 427 | 5,330 | 4,530 | 3,330 | 1,230 | 662 | 471 | 509 |
| 6 | 245 | 282 | 415 | 482 | 402 | 7,700 | 2,170 | 2,750 | 1,130 | 630 | 444 | 463 |
| 7 | 241 | 307 | 386 | 425 | 452 | 3,240 | 1,560 | 2,420 | 1,060 | 614 | 459 | 525 |
| 8 | 234 | 260 | 371 | 408 | 422 | 2,280 | 1,290 | 3,730 | 1,020 | 612 | 469 | 621 |
| 9 | 287 | 233 | 357 | 379 | 359 | 2,900 | 1,180 | 2,710 | 973 | 601 | 555 | 512 |
| 10 | 312 | 227 | 347 | 372 | 346 | 5,300 | 1,090 | 2,260 | 1,590 | 583 | 493 | 471 |
| 11 | 259 | 279 | 342 | 367 | 343 | 2,940 | 1,090 | 4,130 | 1,880 | 608 | 447 | 411 |
| 12 | 228 | 305 | 459 | 366 | 340 | 2,490 | 1,460 | 4,210 | 1,440 | 692 | 422 | 387 |
| 13 | 240 | 307 | 630 | 353 | 344 | 2,220 | 1,200 | 2,650 | 1,340 | 592 | 409 | 371 |
| 14 | 257 | 309 | 521 | 343 | 502 | 1,930 | 1,030 | 2,310 | 1,210 | 563 | 410 | 336 |
| 15 | 256 | 257 | 442 | 338 | 865 | 1,810 | 938 | 2,380 | 953 | 551 | 406 | 333 |
| 16 | 299 | 271 | 400 | 333 | 815 | 1,700 | 1,880 | 2,250 | 925 | 542 | 396 | 319 |
| 17 | 310 | 354 | 381 | 325 | 1,640 | 1,570 | 2,000 | 2,150 | 938 | 538 | 385 | 380 |
| 18 | 263 | 271 | 362 | 349 | 1,900 | 1,410 | 1,390 | 3,210 | 949 | 527 | 376 | 408 |
| 19 | 243 | 252 | 351 | 398 | 1,180 | 1,290 | 3,530 | 2,620 | 1,060 | 765 | 369 | 359 |
| 20 | 235 | 300 | 348 | 393 | 843 | 1,230 | 6,740 | 2,540 | 1,000 | 626 | 365 | 358 |
| 21 | 230 | 323 | 339 | 371 | 1,530 | 1,290 | 4,780 | 2,240 | 1,060 | 550 | 365 | 355 |
| 22 | 228 | 265 | 333 | 347 | 2,840 | 1,480 | 2,450 | 2,080 | 1,010 | 524 | 355 | 420 |
| 23 | 283 | 270 | 326 | 352 | 1,450 | 1,710 | 2,600 | 2,020 | 948 | 506 | 348 | 579 |
| 24 | 313 | 278 | 321 | 332 | 1,330 | 1,640 | 2,410 | 1,740 | 890 | 690 | 345 | 679 |
| 25 | 260 | 530 | 317 | 350 | 3,270 | 1,470 | 4,230 | 1,640 | 844 | 708 | 472 | 599 |
| 26 | 273 | 992 | 312 | 355 | 2,140 | 1,550 | 5,600 | 4,450 | 836 | 642 | 368 | 2,430 |
| 27 | 315 | 635 | 308 | 348 | 1,800 | 1,280 | 4,110 | 4,440 | 811 | 585 | 357 | 1,840 |
| 28 | 249 | 495 | 304 | 330 | 3,720 | 952 | 3,510 | 2,700 | 803 | 557 | 352 | 897 |
| 29 | 241 | 395 | 304 | 321 | --- | 807 | 2,710 | 2,390 | 758 | 507 | 344 | 691 |
| 30 | 311 | 965 | 345 | 318 | --- | 773 | 2,250 | 2,240 | 714 | 1,170 | 335 | 770 |
| 31 | 322 | --- | 528 | 313 | --- | 763 | --- | 2,010 | --- | 686 | 315 | --- |
| Total | 8,312 | 10,621 | 13,868 | 12,815 | 31,056 | 68,575 | 71,155 | 91,180 | 32,822 | 19,556 | 12,908 | 17,739 |
| Mean | 268 | 354 | 447 | 413 | 1,109 | 2,212 | 2,372 | 2,941 | 1,094 | 631 | 416 | 591 |
| Max | 325 | 992 | 1,330 | 987 | 3,720 | 7,700 | 6,740 | 6,140 | 1,880 | 1,170 | 555 | 2,430 |
| Min | 228 | 227 | 304 | 313 | 340 | 763 | 695 | 1,640 | 714 | 506 | 315 | 291 |
| Cfsm | 0.42 | 0.56 | 0.70 | 0.65 | 1.75 | 3.48 | 3.74 | 4.63 | 1.72 | 0.99 | 0.66 | 0.93 |
| In. | 0.49 | 0.62 | 0.81 | 0.75 | 1.82 | 4.02 | 4.17 | 5.34 | 1.92 | 1.15 | 0.76 | 1.04 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2011, BY WATER YEAR (WY)**

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 450 | 539 | 721 | 868 | 900 | 1,075 | 1,006 | 979 | 805 | 619 | 438 | 420 |
| Max | 1,425 | 1,175 | 2,027 | 3,502 | 1,839 | 2,744 | 2,372 | 2,941 | 1,745 | 1,525 | 1,235 | 1,528 |
| (WY) | (1987) | (1986) | (1991) | (2005) | (1975) | (2007) | (2011) | (2011) | (1981) | (1993) | (1979) | (1979) |
| Min | 198 | 188 | 208 | 239 | 287 | 344 | 444 | 268 | 192 | 211 | 172 | 178 |
| (WY) | (2000) | (2000) | (2000) | (1977) | (1992) | (1983) | (1976) | (1988) | (1988) | (1988) | (1988) | (1999) |

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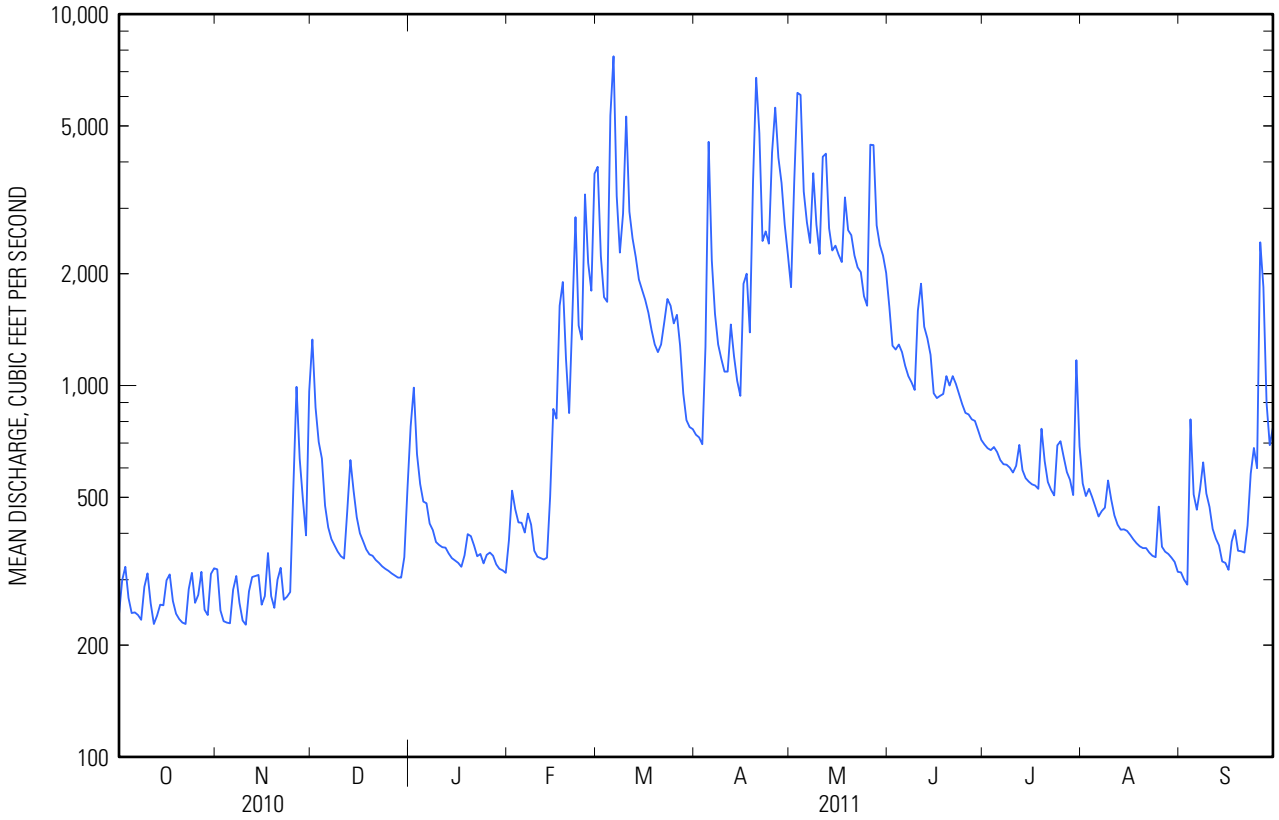
**SUMMARY STATISTICS**

| | Calendar Year 2010 | | Water Year 2011 | | Water Years 1974 - 2011 | |
|---|---|---|---|---|---|---|
| **Annual total** | 232,902 | | 390,607 | | | |
| **Annual mean** | 638 | | 1,070 | | 734 | |
| **Highest annual mean** | | | | | 1,070 | 2011 |
| **Lowest annual mean** | | | | | 336 | 1988 |
| **Highest daily mean** | 5,780 | Mar 14 | 7,700 | Mar 6 | 10,700 | Jan 6, 2005 |
| **Lowest daily mean** | 207 | Sep 15 | 227 | Nov 10 | 112 | Jul 17, 1988 |
| **Annual seven-day minimum** | 215 | Sep 9 | 253 | Nov 4 | 124 | Jul 11, 1988 |
| **Maximum peak flow** | | | 8,310 | Mar 6 | 11,600 | Jan 6, 2005 |
| **Maximum peak stage** | | | 15.57 | Mar 6 | 19.22 | Jan 6, 2005 |
| **Instantaneous low flow** | | | 217 | Oct 13[a] | 112 | Jul 17, 1988 |
| **Annual runoff (cfsm)** | 1.00 | | 1.69 | | 1.16 | |
| **Annual runoff (inches)** | 13.64 | | 22.88 | | 15.71 | |
| **10 percent exceeds** | 1,130 | | 2,510 | | 1,390 | |
| **50 percent exceeds** | 487 | | 550 | | 520 | |
| **90 percent exceeds** | 243 | | 283 | | 263 | |

[a] Also Nov 10.