# PUYALLUP RIVER BASIN

## 12094000 CARBON RIVER NEAR FAIRFAX, WA

LOCATION.--Lat 47°01'41", long 122°01'53", in SW $^1/_4$ SW $^1/_4$ sec.22, T.18 N., R.6 E., Pierce County, Hydrologic Unit 17110014, on left bank, 1.1 mi upstream from State Highway 165 (Fairfax) bridge, 1.2 mi northwest of Fairfax, 2.3 mi downstream from Evans Creek, 4 mi south of Carbonado, and at mile 16.1.

DRAINAGE AREA.--78.9 $mi^2$.

PERIOD OF RECORD.--December 1910 to June 1912, April 1929 to September 1965, October 1965 to May 1978, October 1991 to current year. Published as "at Fairfax" 1910-12, 1966-78.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,201.7 ft above NGVD of 1929 (USGS National Mapping Division). Prior to July 12, 1912, nonrecording gage at railroad crossing 1.7 mi upstream at different datum. March 1929 to September 1965, recording gage 350 ft upstream at datum 1,212.6 ft above NGVD of 1929. October 1965 to May 1978, recording gage 1.7 mi upstream at datum then in use.

REMARKS.--No estimated daily discharges. Records fair. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--59 years (water years 1930-77, 1992-2002), 429 $ft^3/s$, 73.79 in/yr, 310,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 $ft^3/s$ Feb. 8, 1996, gage height, 15.85 ft; minimum discharge, 32 $ft^3/s$ Nov. 24, 1993.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 24, 1990, reached a stage of 8.68 ft, from floodmark at former site and datum 350 ft upstream, discharge, 13,000 $ft^3/s$, from rating extended above 6,200 $ft^3/s$.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 $ft^3/s$ and maximum (*):

| Date | Time | Discharge ($ft^3/s$) | Gage height (ft) | Date | Time | Discharge ($ft^3/s$) | Gage height (ft) |
|---|---|---|---|---|---|---|---|
| Nov. 14 | 1630 | 3,180 | 10.69 | Jan. 08 | 0115 | 4,200 | 11.46 |
| Dec. 14 | 0030 | 1,850 | 9.59 | Apr. 14 | 0700 | *4,330 | *11.55 |
| Dec. 17 | 0200 | 2,200 | 9.88 | Jun. 29 | 0830 | 2,070 | 9.70 |

Minimum discharge, 90 $ft^3/s$ Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 111 | 628 | 432 | 274 | 238 | 272 | 247 | 412 | 861 | 787 | 339 | 280 |
| 2 | 118 | 638 | 406 | 390 | 218 | 246 | 246 | 513 | 823 | 666 | 309 | 340 |
| 3 | 115 | 507 | 359 | 398 | 219 | 229 | 242 | 461 | 798 | 598 | 276 | 320 |
| 4 | 120 | 381 | 324 | 332 | 206 | 218 | 258 | 376 | 836 | 512 | 276 | 192 |
| 5 | 113 | 429 | 298 | 291 | 209 | 219 | 322 | 344 | 1190 | 481 | 270 | 176 |
| 6 | 105 | 350 | 364 | 300 | 218 | 211 | 414 | 304 | 1140 | 499 | 243 | 155 |
| 7 | 96 | 299 | 325 | 1760 | 245 | 192 | 510 | 274 | 811 | 629 | 219 | 145 |
| 8 | 126 | 266 | 318 | 2890 | 266 | 180 | 429 | 260 | 616 | 830 | 212 | 127 |
| 9 | 121 | 239 | 313 | 1180 | 244 | 174 | 414 | 246 | 466 | 673 | 237 | 131 |
| 10 | 185 | 220 | 301 | 819 | 242 | 173 | 537 | 234 | 478 | 751 | 300 | 159 |
| 11 | 318 | 208 | 268 | 632 | 243 | 340 | 622 | 226 | 639 | 855 | 318 | 176 |
| 12 | 357 | 220 | 245 | 629 | 225 | 465 | 761 | 248 | 830 | 931 | 299 | 196 |
| 13 | 452 | 320 | 871 | 517 | 211 | 346 | 1170 | 390 | 1050 | 928 | 326 | 193 |
| 14 | 737 | 2270 | 1310 | 416 | 198 | 306 | 3210 | 493 | 1190 | 806 | 351 | 195 |
| 15 | 487 | 1610 | 729 | 346 | 189 | 274 | 1410 | 432 | 1150 | 588 | 363 | 212 |
| 16 | 301 | 946 | 1170 | 320 | 187 | 249 | 879 | 376 | 1000 | 557 | 312 | 220 |
| 17 | 242 | 662 | 1580 | 291 | 185 | 227 | 632 | 398 | 784 | 588 | 277 | 189 |
| 18 | 201 | 475 | 901 | 274 | 192 | 210 | 495 | 446 | 814 | 565 | 274 | 148 |
| 19 | 236 | 490 | 634 | 283 | 214 | 296 | 420 | 436 | 728 | 539 | 248 | 160 |
| 20 | 259 | 499 | 487 | 322 | 215 | 461 | 382 | 578 | 682 | 453 | 228 | 194 |
| 21 | 286 | 451 | 392 | 304 | 498 | 344 | 347 | 717 | 781 | 419 | 236 | 147 |
| 22 | 426 | 587 | 345 | 265 | 975 | 329 | 336 | 752 | 878 | 468 | 236 | 138 |
| 23 | 633 | 773 | 302 | 247 | 985 | 327 | 308 | 638 | 847 | 538 | 265 | 145 |
| 24 | 403 | 535 | 273 | 382 | 879 | 340 | 286 | 564 | 717 | 547 | 290 | 141 |
| 25 | 459 | 419 | 250 | 615 | 593 | 363 | 277 | 594 | 784 | 530 | 302 | 137 |
| 26 | 457 | 363 | 232 | 450 | 440 | 340 | 281 | 725 | 967 | 515 | 279 | 128 |
| 27 | 410 | 315 | 225 | 334 | 347 | 316 | 301 | 870 | 1010 | 452 | 276 | 121 |
| 28 | 331 | 355 | 271 | 288 | 307 | 302 | 272 | 1110 | 1070 | 413 | 320 | 116 |
| 29 | 288 | 445 | 251 | 257 | --- | 280 | 268 | 1410 | 1760 | 588 | 324 | 125 |
| 30 | 321 | 400 | 234 | 249 | --- | 259 | 307 | 1250 | 1180 | 624 | 278 | 110 |
| 31 | 608 | --- | 259 | 264 | --- | 247 | --- | 1010 | --- | 421 | 229 | --- |
| TOTAL | 9422 | 16300 | 14669 | 16319 | 9388 | 8735 | 16583 | 17087 | 26880 | 18751 | 8712 | 5216 |
| MEAN | 304 | 543 | 473 | 526 | 335 | 282 | 553 | 551 | 896 | 605 | 281 | 174 |
| MAX | 737 | 2270 | 1580 | 2890 | 985 | 465 | 3210 | 1410 | 1760 | 931 | 363 | 340 |
| MIN | 96 | 208 | 225 | 247 | 185 | 173 | 242 | 226 | 466 | 413 | 212 | 110 |
| AC-FT | 18690 | 32330 | 29100 | 32370 | 18620 | 17330 | 32890 | 33890 | 53320 | 37190 | 17280 | 10350 |
| CFSM | 3.85 | 6.89 | 6.00 | 6.67 | 4.25 | 3.57 | 7.01 | 6.99 | 11.4 | 7.67 | 3.56 | 2.20 |
| IN. | 4.44 | 7.69 | 6.92 | 7.69 | 4.43 | 4.12 | 7.82 | 8.06 | 12.67 | 8.84 | 4.11 | 2.46 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002, BY WATER YEAR (WY)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEAN | 313 | 496 | 545 | 467 | 381 | 312 | 385 | 557 | 649 | 486 | 316 | 243 |
| MAX | 830 | 1732 | 1952 | 948 | 1301 | 879 | 577 | 854 | 1083 | 828 | 500 | 538 |
| (WY) | 1960 | 1996 | 1934 | 1934 | 1996 | 1972 | 1938 | 1936 | 1964 | 1972 | 1964 | 1959 |
| MIN | 109 | 59.0 | 110 | 110 | 131 | 143 | 134 | 346 | 306 | 264 | 201 | 158 |
| (WY) | 1975 | 1930 | 1953 | 1937 | 1966 | 1941 | 1975 | 1941 | 1992 | 1940 | 1994 | 1930 |

| SUMMARY STATISTICS | FOR 2001 CALENDAR YEAR | | FOR 2002 WATER YEAR | | WATER YEARS 1930 - 2002 | |
|---|---|---|---|---|---|---|
| ANNUAL TOTAL | 130911 | | 168062 | | | |
| ANNUAL MEAN | 359 | | 460 | | 429 | |
| HIGHEST ANNUAL MEAN | | | | | 664 | 1996 |
| LOWEST ANNUAL MEAN | | | | | 276 | 1941 |
| HIGHEST DAILY MEAN | 2270 | Nov 14 | 3210 | Apr 14 | 9020 | Feb 8 1996 |
| LOWEST DAILY MEAN | 96 | Oct 7 | 96 | Oct 7 | 40 | Nov 28 1952 |
| ANNUAL SEVEN-DAY MINIMUM | 111 | Oct 1 | 111 | Oct 1 | 42 | Nov 25 1952 |
| ANNUAL RUNOFF (AC-FT) | 259700 | | 333400 | | 310500 | |
| ANNUAL RUNOFF (CFSM) | 4.55 | | 5.84 | | 5.43 | |
| ANNUAL RUNOFF (INCHES) | 61.72 | | 79.24 | | 73.79 | |
| 10 PERCENT EXCEEDS | 613 | | 870 | | 769 | |
| 50 PERCENT EXCEEDS | 314 | | 334 | | 338 | |
| 90 PERCENT EXCEEDS | 149 | | 191 | | 159 | |