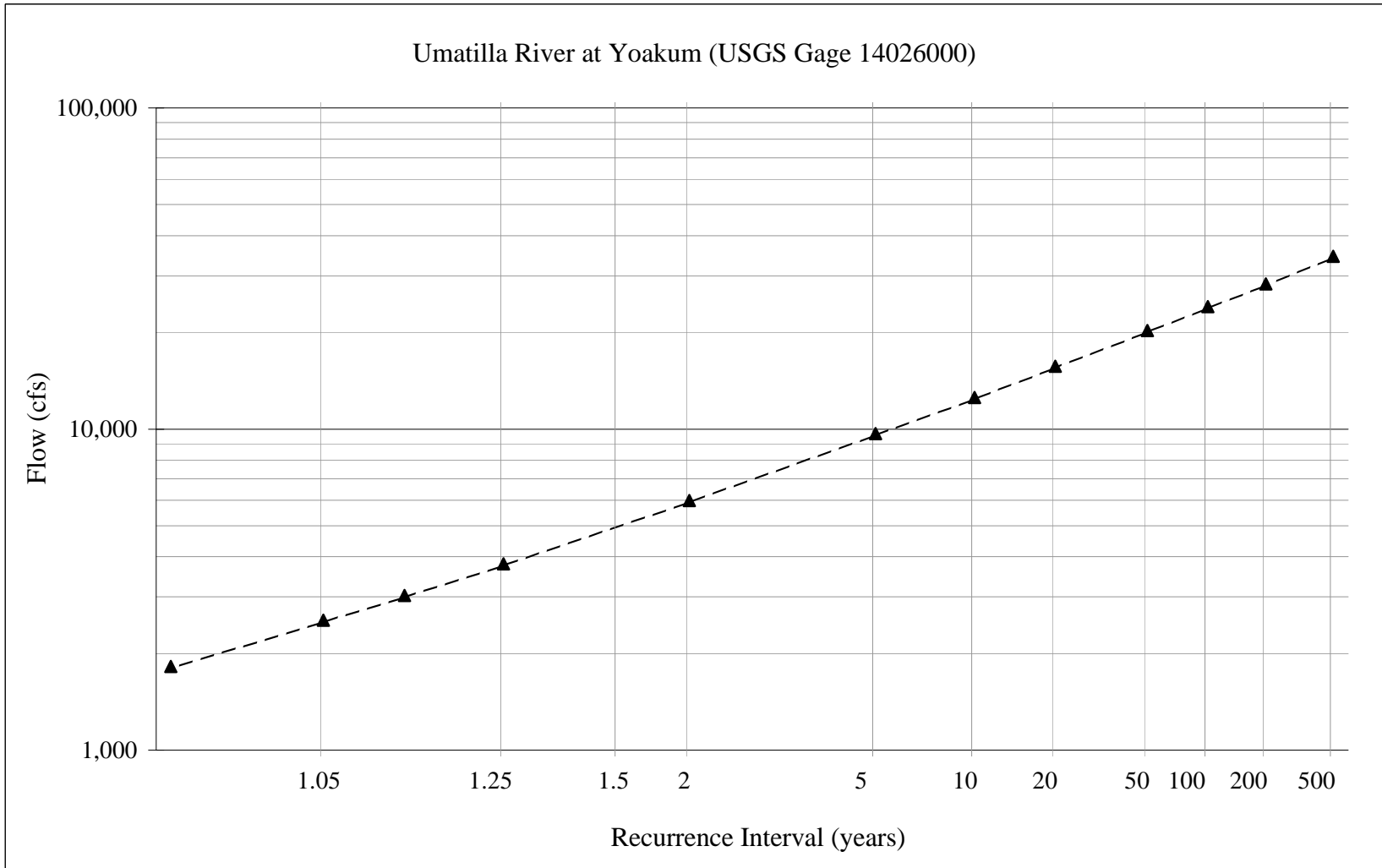


Appendix B

Hydrology Data



Flood flow hydrograph for Umatilla River at Yoakum, Oregon (USGS Gage 14026000).

-OUTLIER TESTS -
 XXX
 LOW OUTLIER TEST
 XXXXXXXXXXXXXXXXXXXXXXX

BASED ON 49 EVENTS, 10 PERCENT OUTLIER TEST VALUE K(N) = 2.760
 0 LOW OUTLIER(S) IDENTIFIED BELOW TEST VALUE OF 1296.2

XXXXXXXXXXXXXXXXXXXX
 HIGH OUTLIER TEST
 XXXXXXXXXXXXXXXXXXXXXXX

BASED ON 49 EVENTS, 10 PERCENT OUTLIER TEST VALUE K(N) = 2.760
 0 HIGH OUTLIER(S) IDENTIFIED ABOVE TEST VALUE OF 27718.
 XXX

-SKEW WEIGHTING -
 XXX
 BASED ON 49 EVENTS, MEAN-SQUARE ERROR OF STATION SKEW = .106
 DEFAULT OR INPUT MEAN-SQUARE ERROR OF GENERALIZED SKEW = .302
 XXX

FINAL RESULTS

-FREQUENCY CURVE- 6000 Umatilla River - Yoakum gage
 #####N#####
 * COMPUTED EXPECTED * PERCENT * CONFIDENCE LIMITS *
 * CURVE PROBABILITY * CHANCE * .05 .95 *
 * FLOW IN CFS * EXCEEDANCE * FLOW IN CFS *
 #####
 * 33900. 38100. * .2 * 49400. 25700. *
 * 27800. 30300. * .5 * 39000. 21600. *
 * 23600. 25300. * 1.0 * 32300. 18700. *
 * 19900. 20900. * 2.0 * 26300. 16100. *
 * 15400. 15900. * 5.0 * 19500. 12800. *
 * 12300. 12600. * 10.0 * 15100. 10500. *
 * 9500. 9590. * 20.0 * 11200. 8250. *
 * 5880. 5880. * 50.0 * 6710. 5150. *
 * 3740. 3710. * 80.0 * 4310. 3160. *
 * 2980. 2940. * 90.0 * 3500. 2440. *
 * 2490. 2430. * 95.0 * 2960. 1980. *
 * 1790. 1700. * 99.0 * 2210. 1350. *
 #####
 * SYSTEMATIC STATISTICS *
 #####
 * LOG TRANSFORM: FLOW, CFS * NUMBER OF EVENTS *
 #####
 * MEAN 3.7777 * HISTORIC EVENTS 0 *
 * STANDARD DEV .2410 * HIGH OUTLIERS 0 *
 * COMPUTED SKEW -.0100 * LOW OUTLIERS 0 *
 * REGIONAL SKEW .9000 * ZERO OR MISSING 0 *
 * ADOPTED SKEW .2000 * SYSTEMATIC EVENTS 49 *
 #####

```

*****
*           FFA           *
* FLOOD FREQUENCY ANALYSIS *
* PROGRAM DATE: MAY 1992  *
* VERSION: 3.0           *
* RUN DATE AND TIME:     *
* 11 NOV 98 13:00:14    *
*****

```

```

*****
* U.S. ARMY CORPS OF ENGINEERS *
* THE HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *
*****

```

```

INPUT FILE NAME: c:\ffa\6000-u.dat
OUTPUT FILE NAME: c:\ffa\6000-u.out
**STATION IDENTIFICATION**
ID 6000 Umatilla River - Yoakum gage

```

```

**GENERALIZED SKEW**
ISTN GGMSE SKEM
GS 6000 .000 .90

```

```

**SYSTEMATIC EVENTS**
49 EVENTS TO BE ANALYZED

```

```

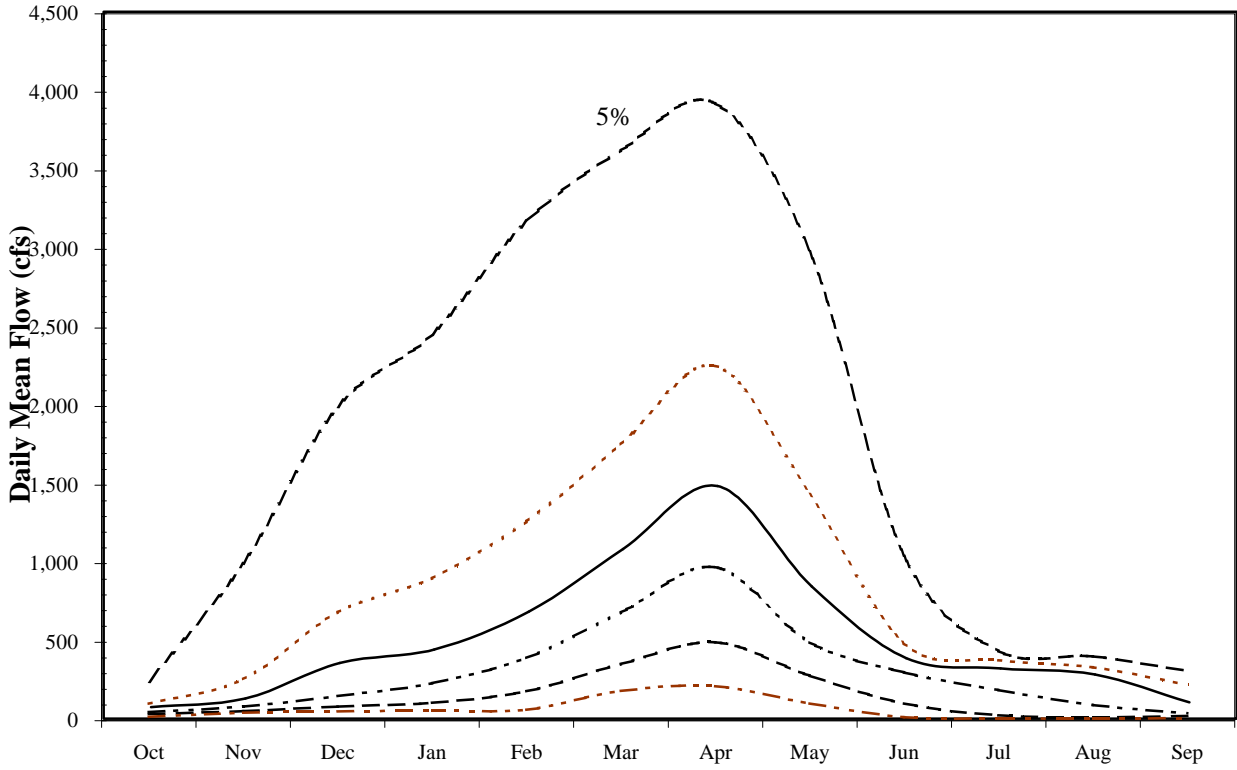
**END OF INPUT DATA**
AAAAAAAAAAAAAAAAAAAAAAAA FINAL RESULTS AAAAAAAAAAAAAAAAAAAAAAAAAA

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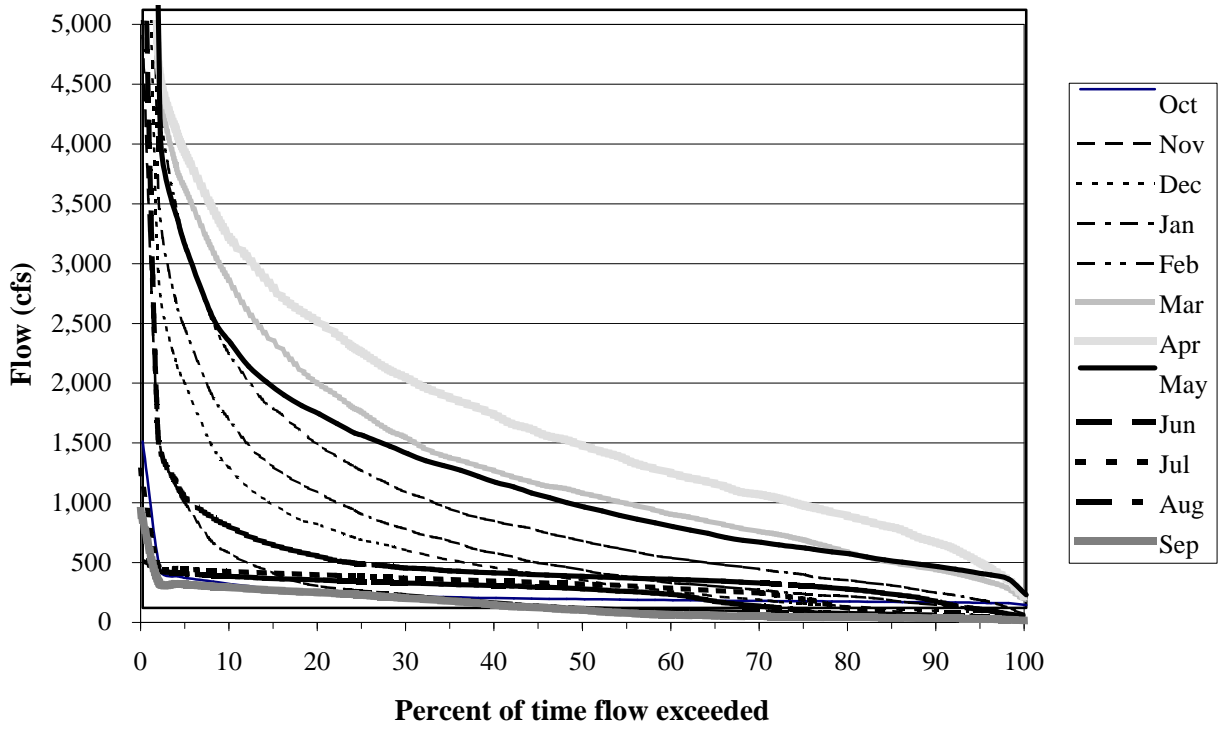
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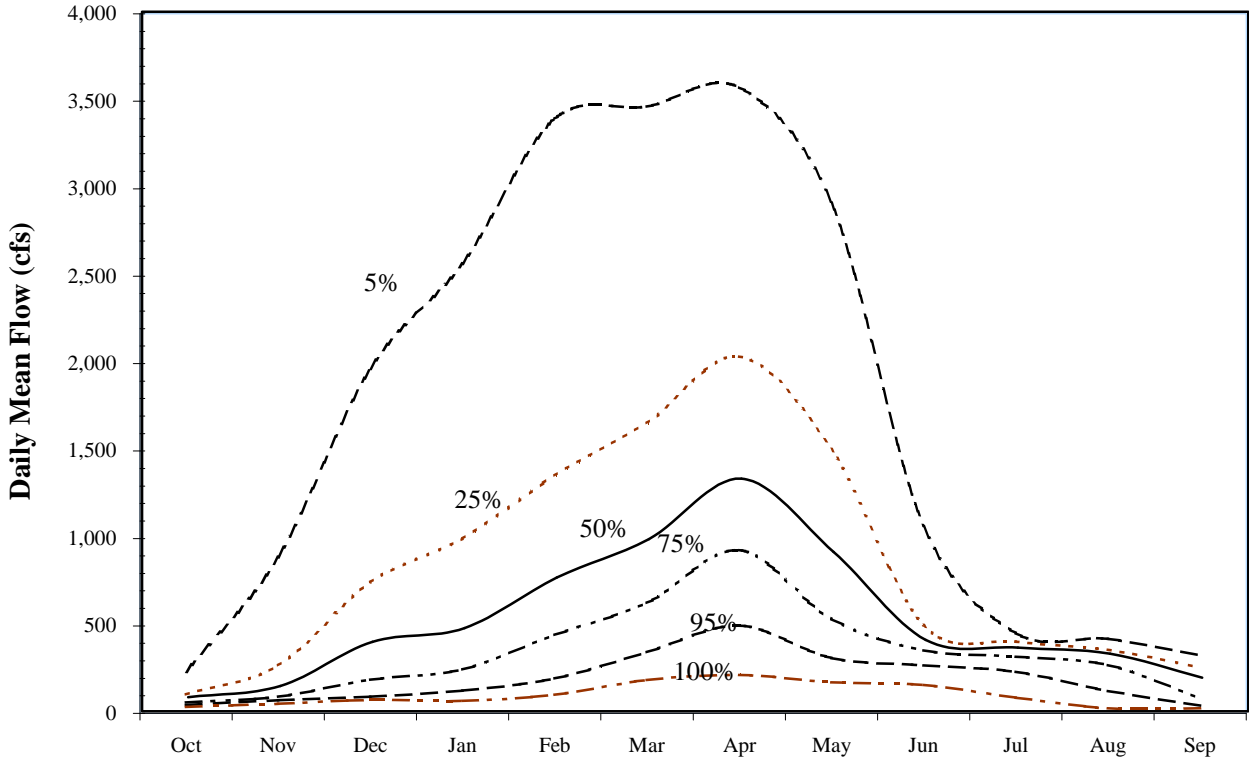
-PLOTTING POSITIONS- 6000 Umatilla River - Yoakum gage
#####
EVENTS ANALYZED ORDERED EVENTS
MON DAY YEAR FLOW CPS RANK WATER FLOW WEIBULL PLOT POS
#####
2 27 1948 6880. 1 1975 16400. 2.00
2 22 1949 13600. 2 1965 15900. 4.00
6 8 1950 5720. 3 1996 15030. 6.00
2 12 1951 5060. 4 1991 13900. 8.00
4 7 1952 5180. 5 1986 13800. 10.00
1 19 1953 7460. 6 1949 13600. 12.00
4 14 1954 3260. 7 1997 12160. 14.00
5 20 1955 3380. 8 1958 11700. 16.00
12 22 1955 6600. 9 1972 10300. 18.00
4 6 1957 6390. 10 1969 9520. 20.00
4 21 1958 11700. 11 1982 9260. 22.00
12 12 1958 8680. 12 1981 8880. 24.00
3 23 1960 3050. 13 1959 8680. 26.00
2 22 1961 4110. 14 1976 8590. 28.00
1 9 1962 3930. 15 1968 8160. 30.00
2 3 1963 5630. 16 1995 8034. 32.00
4 1 1964 3780. 17 1970 7850. 34.00
1 30 1965 15900. 18 1953 7460. 36.00
4 2 1966 1960. 19 1983 7040. 38.00
12 13 1966 4300. 20 1984 6920. 40.00
12 26 1967 8160. 21 1948 6880. 42.00
1 6 1969 9520. 22 1978 6690. 44.00
1 24 1970 7850. 23 1956 6600. 46.00
1 20 1971 5510. 24 1957 6390. 48.00
3 14 1972 10300. 25 1989 5910. 50.00
12 24 1972 2600. 26 1950 5720. 52.00
1 16 1974 5340. 27 1963 5630. 54.00
1 25 1975 16400. 28 1971 5510. 56.00
12 8 1975 8590. 29 1979 5440. 58.00
4 8 1977 2790. 30 1974 5340. 60.00
12 3 1977 6690. 31 1952 5180. 62.00
5 5 1979 5440. 32 1985 5110. 64.00
1 15 1980 2800. 33 1951 5060. 66.00
2 17 1981 8880. 34 1967 4300. 68.00
2 21 1982 9260. 35 1961 4110. 70.00
3 4 1983 7040. 36 1962 3930. 72.00
3 21 1984 6920. 37 1994 3924. 74.00
4 11 1985 5110. 38 1964 3780. 76.00
2 23 1986 13800. 39 1998 3718. 78.00
3 6 1987 2780. 40 1955 3380. 80.00
1 15 1988 3160. 41 1954 3260. 82.00
3 12 1989 5910. 42 1988 3160. 84.00
5 3 1990 2200. 43 1960 3050. 86.00
5 20 1991 13900. 44 1980 2800. 88.00
3 4 1994 3924. 45 1977 2790. 90.00
2 2 1995 8034. 46 1987 2780. 92.00
2 9 1996 15030. 47 1973 2600. 94.00
1 1 1997 12160. 48 1990 2200. 96.00
5 27 1998 3718. 49 1966 1960. 98.00
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```

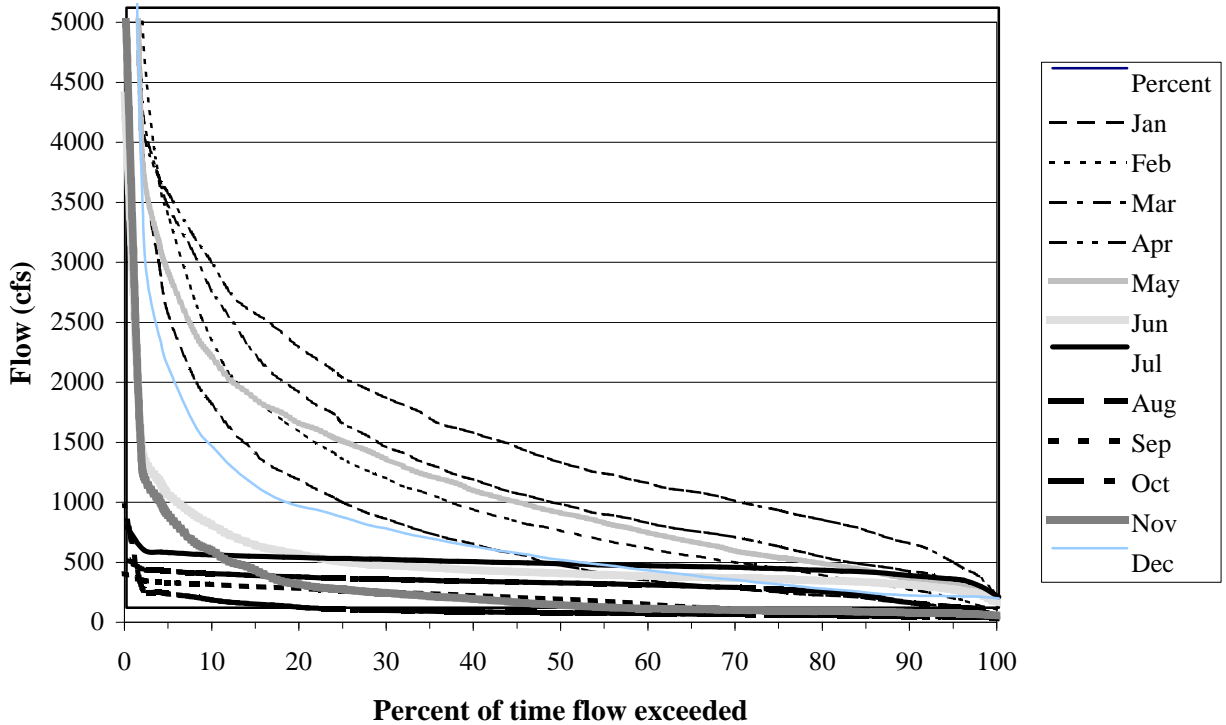


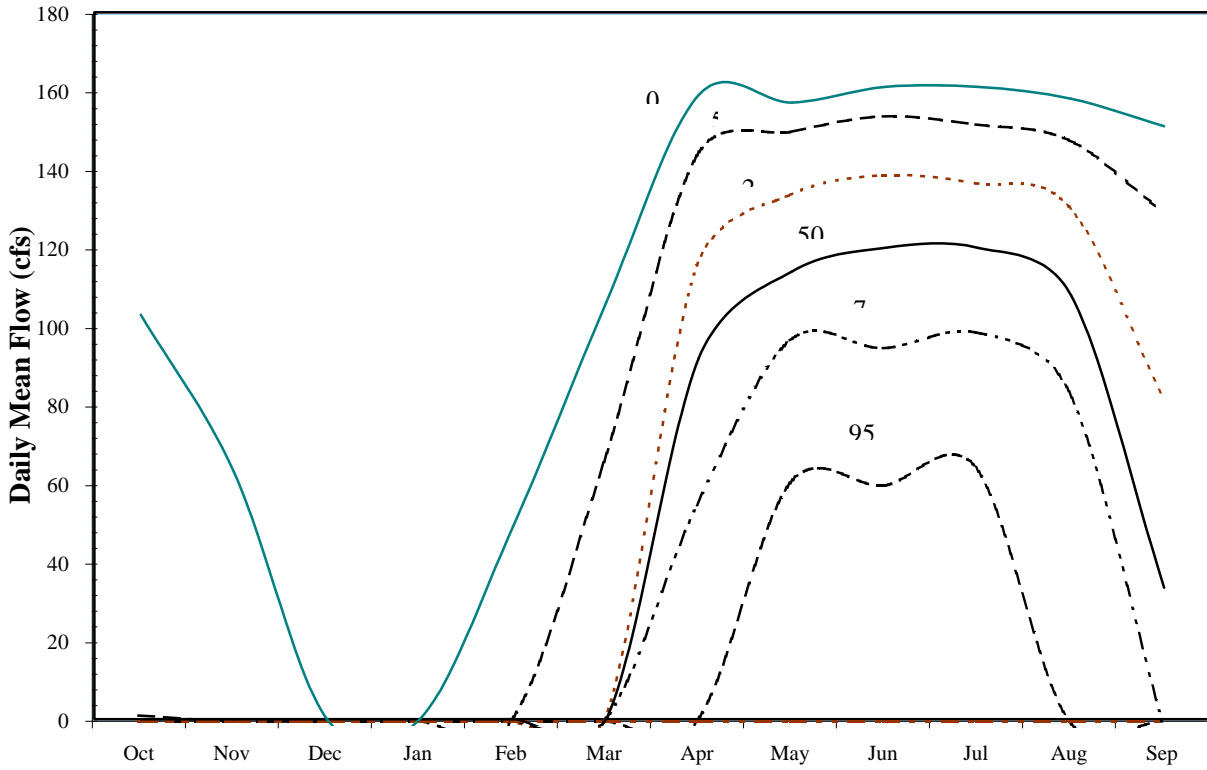
Flow Exceedences for Umatilla River at Yoakum, Oregon
USGS 14026000 (YOKO), period 1904-1991



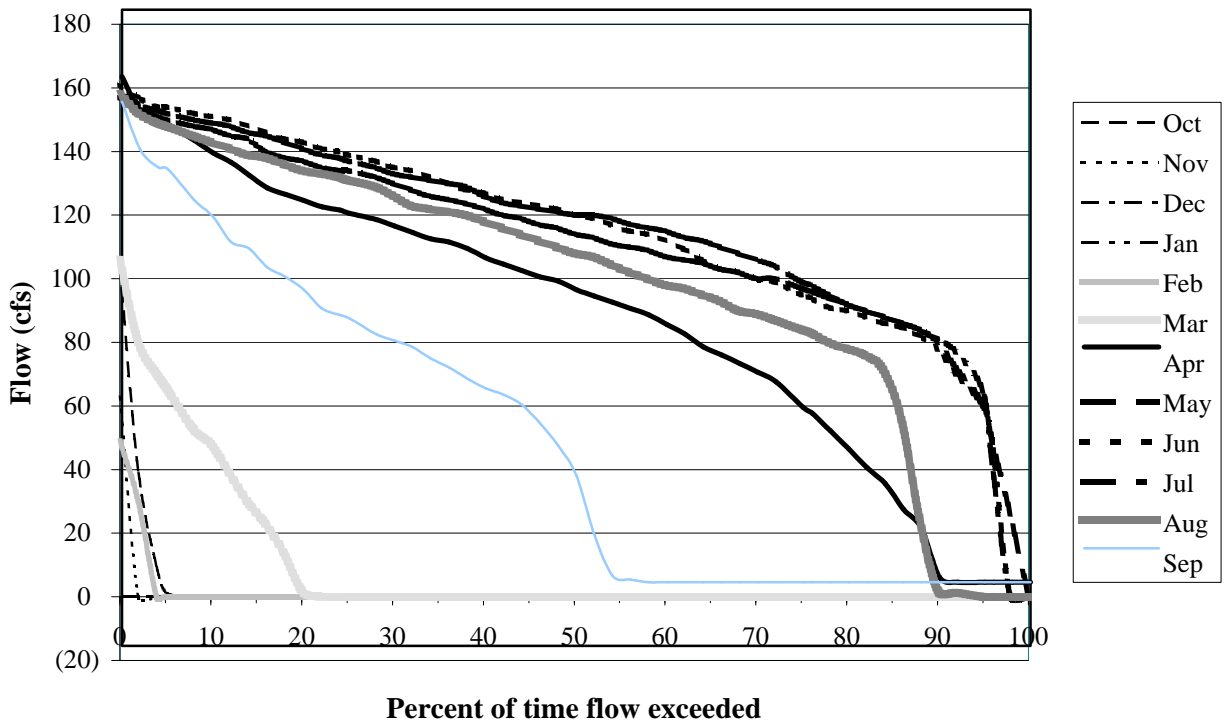


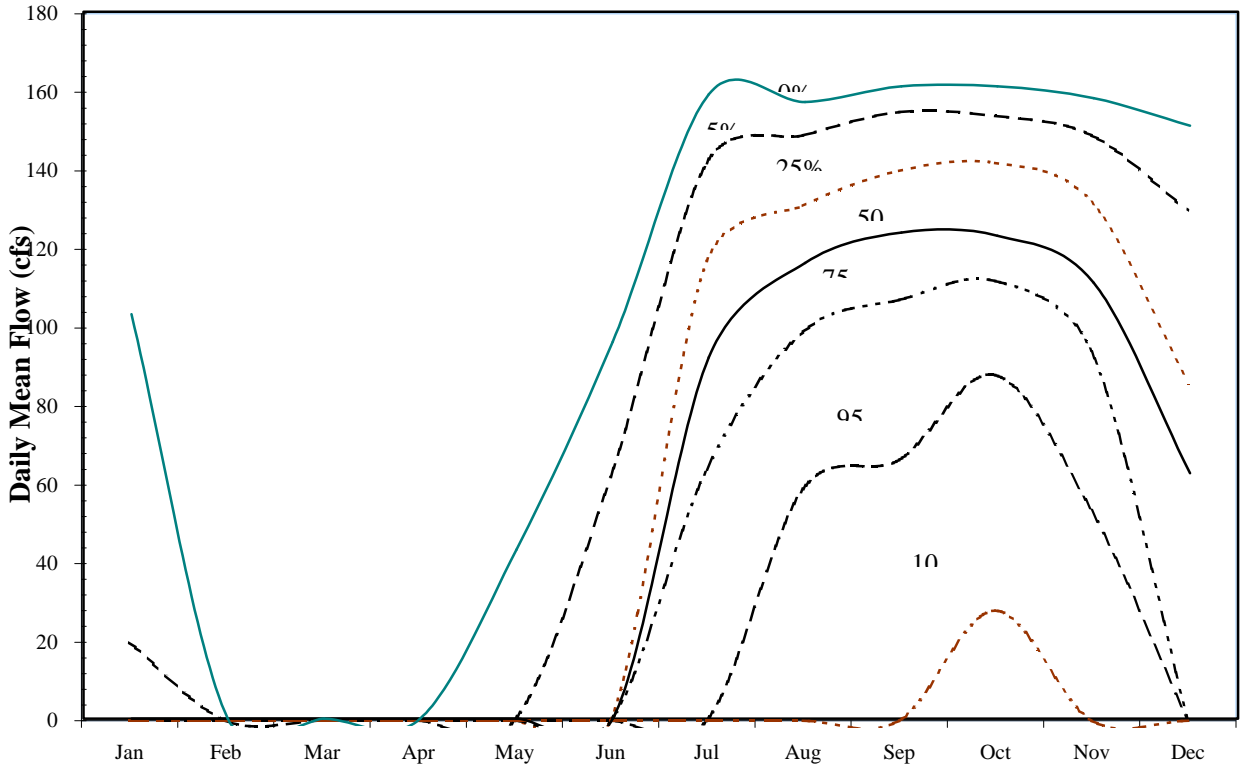
Flow Exceedences for Umatilla River at Yoakum, Oregon
USGS 14026000 (YOKO), period 1948-1998



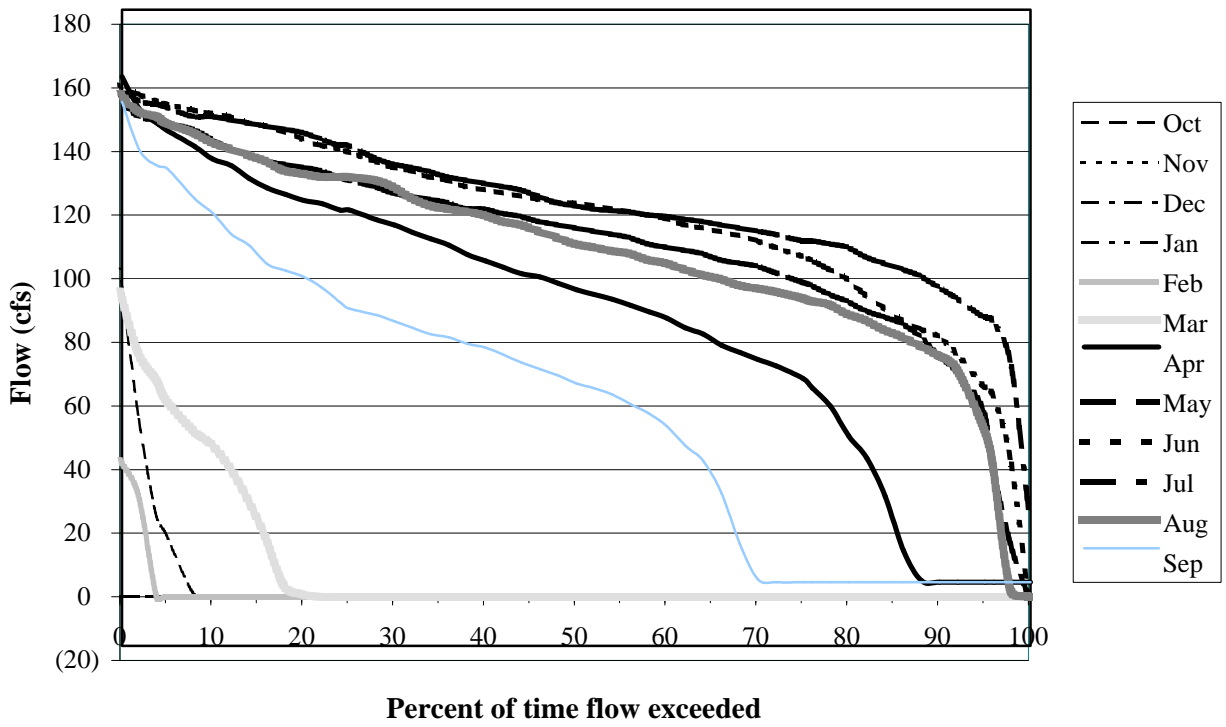


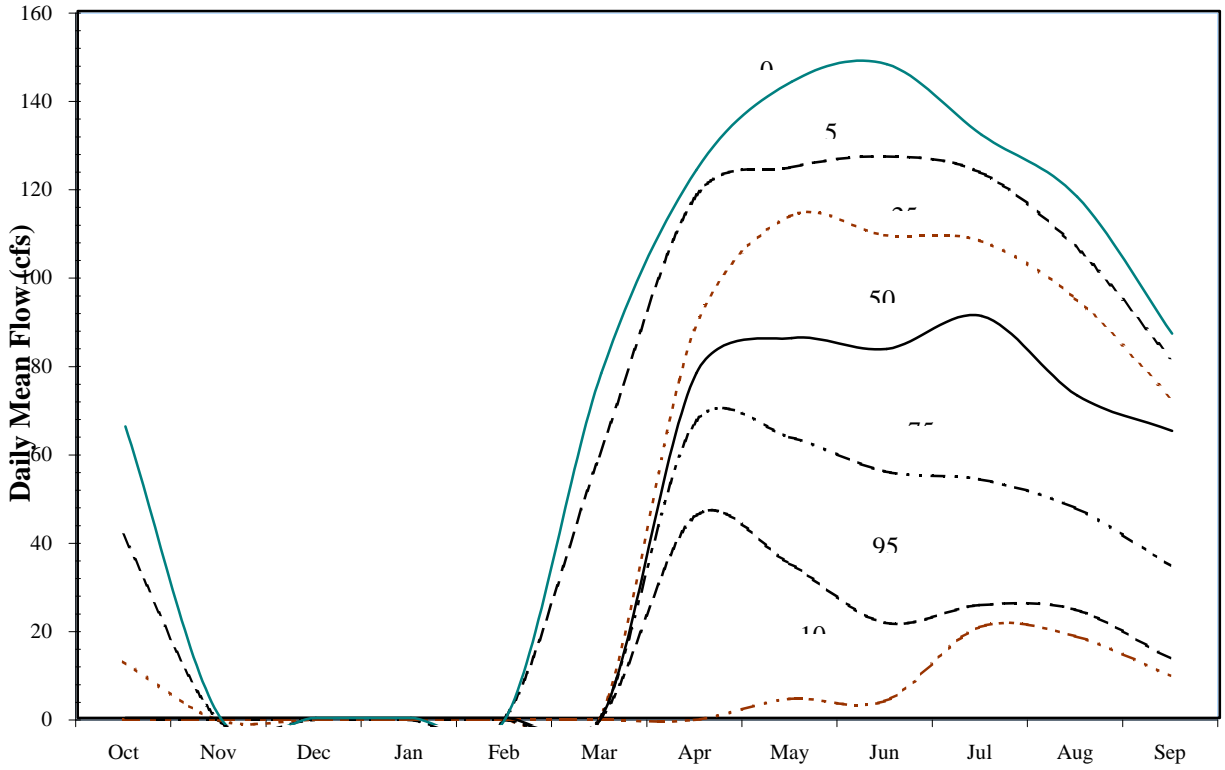
Flow Exceedences for Furnish Canal near Echo, Oregon
USGS 14027000 (FURO), period 1926-1988



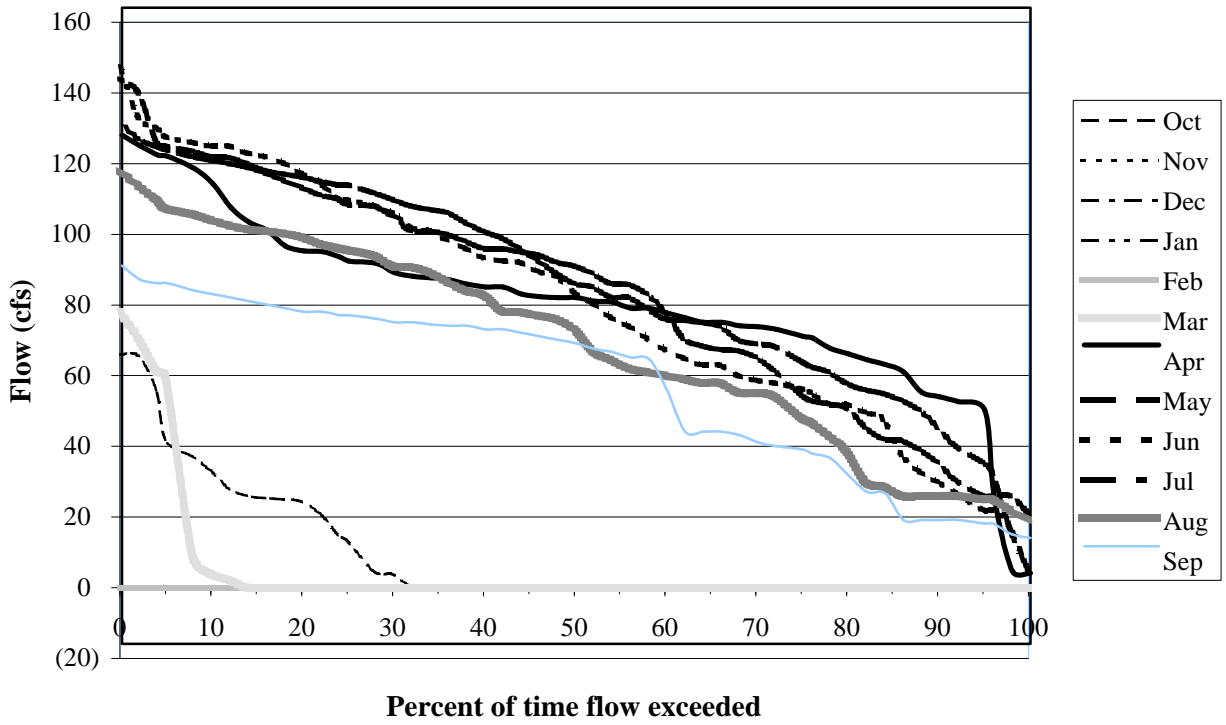


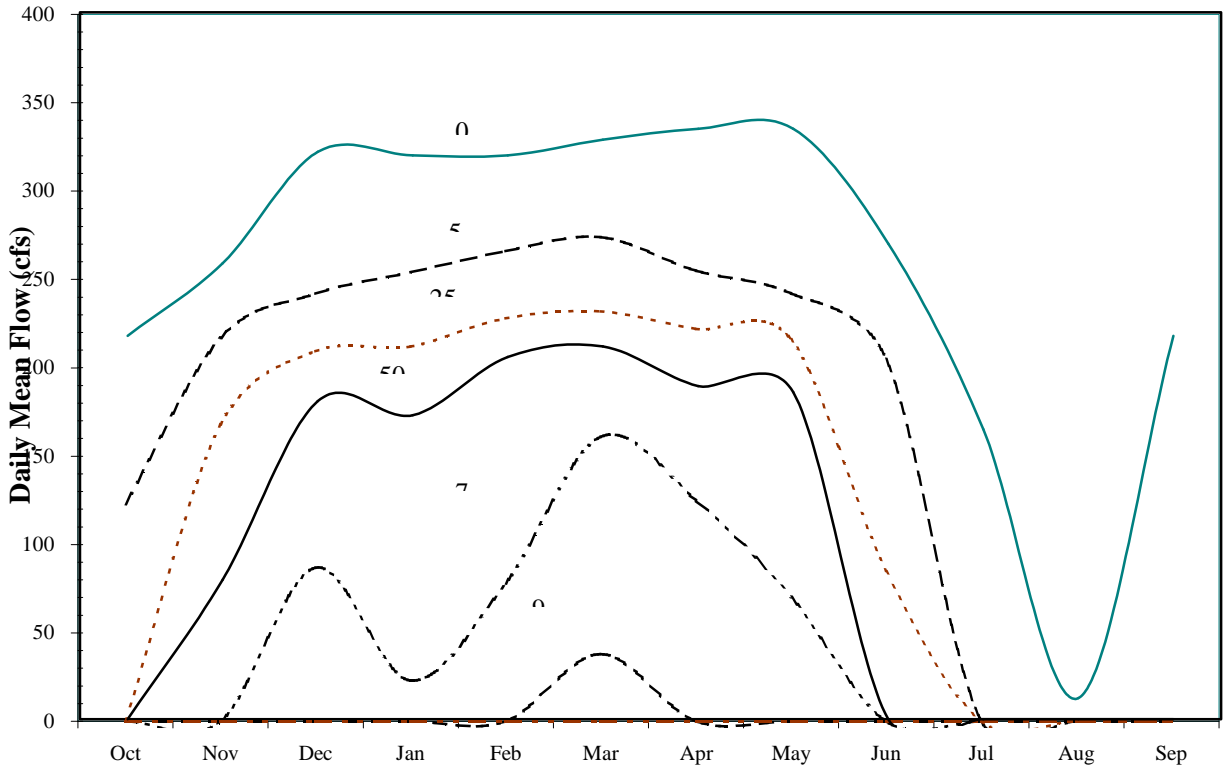
Flow Exceedences for Furnish Canal near Echo, Oregon
 USGS 14027000 (FURO), period 1948-1988



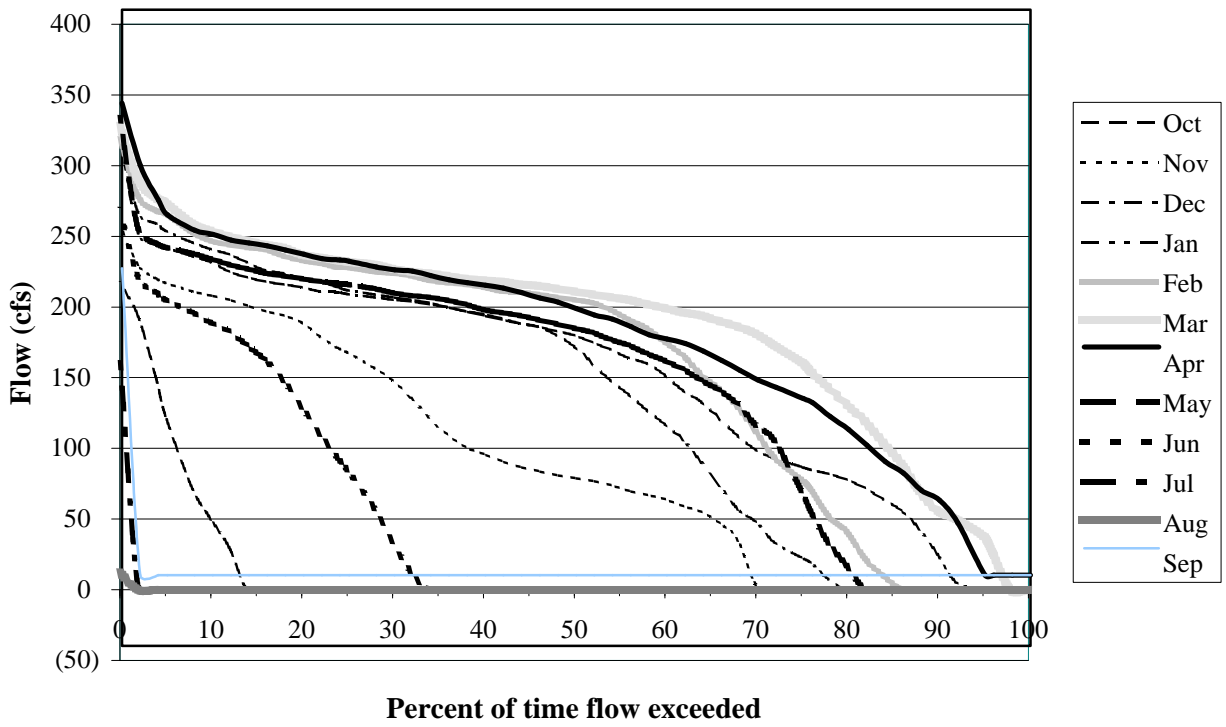


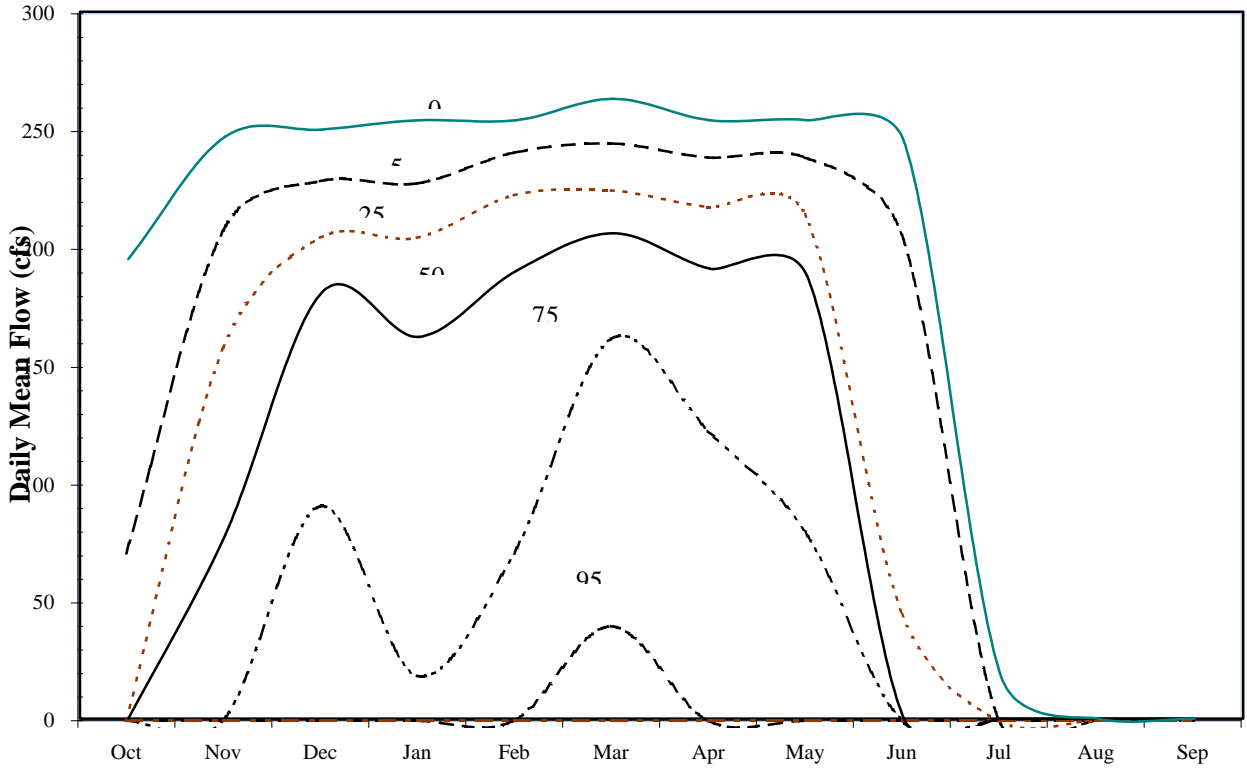
Flow Exceedences for Furnish Canal above Crane-Lisle, Oregon
USGS 14026897, period 1993-1998



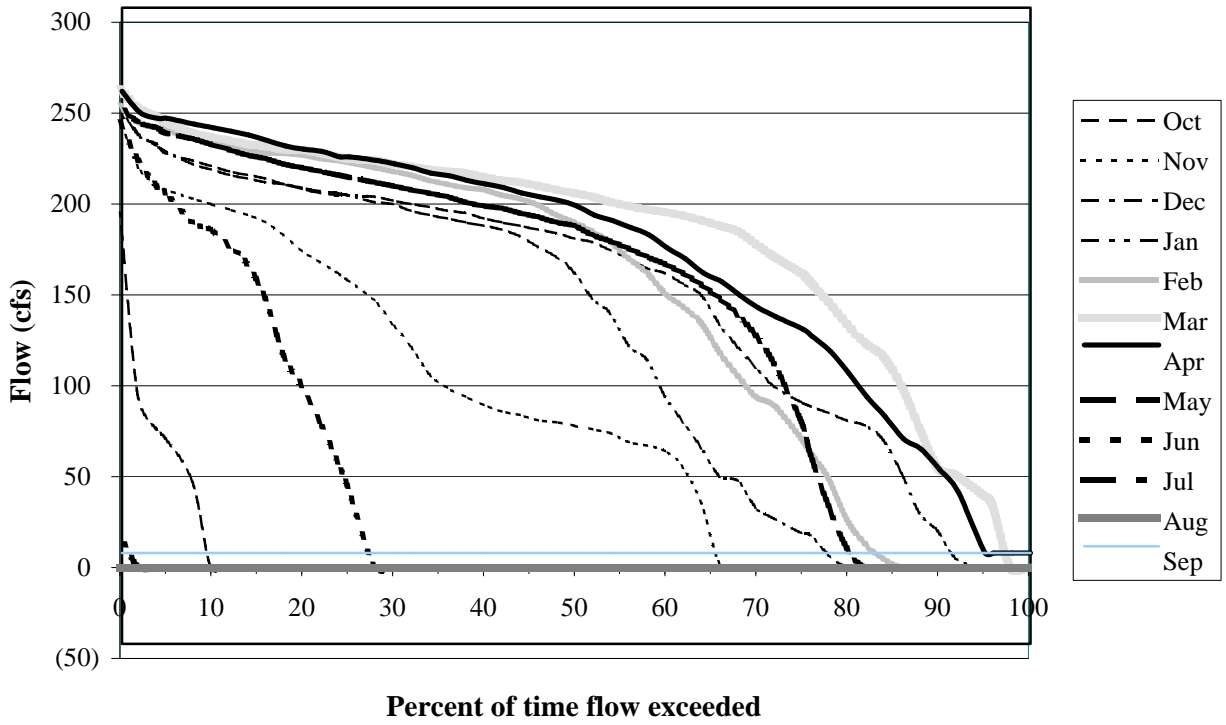


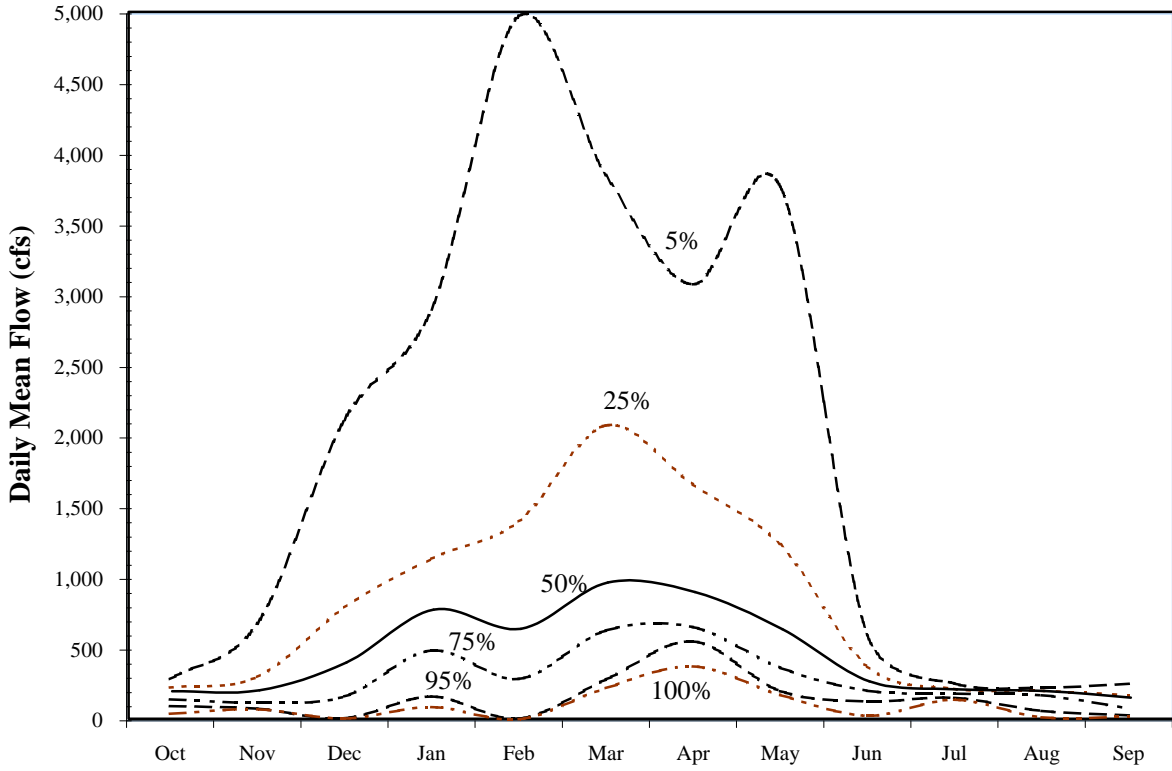
Flow Exceedences for Feed Canal, Oregon
 USGS 14029000 (FCEO), period 1926-1997



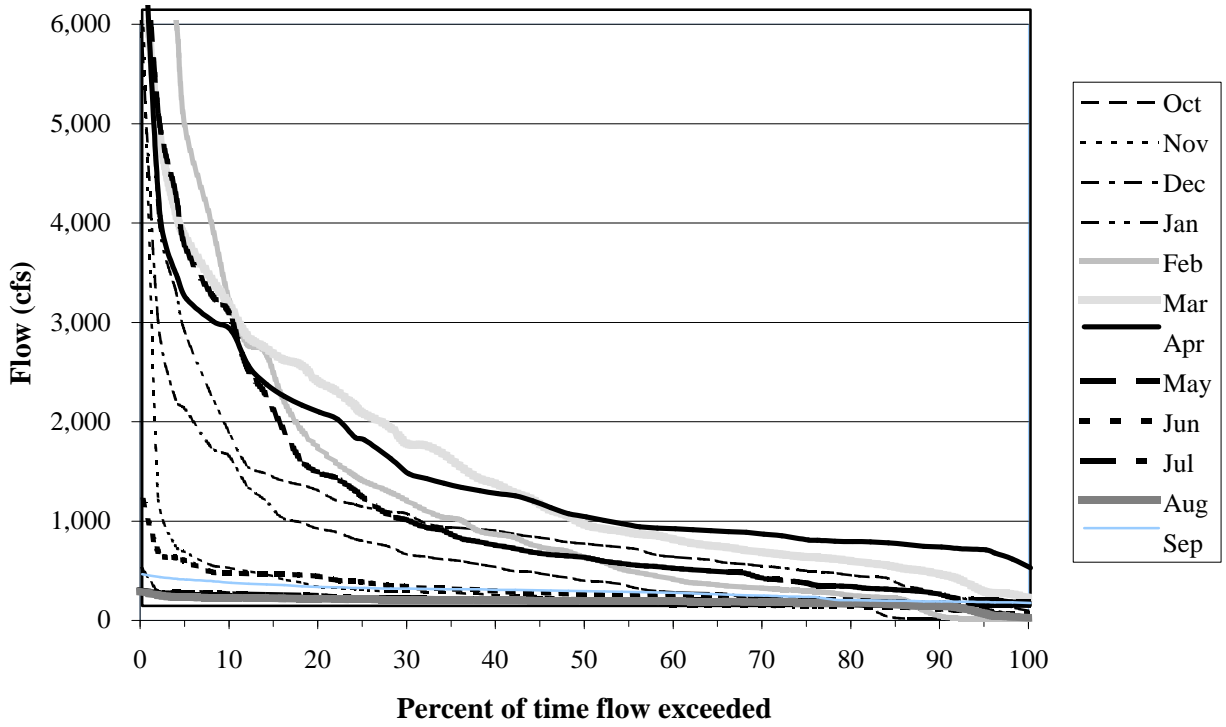


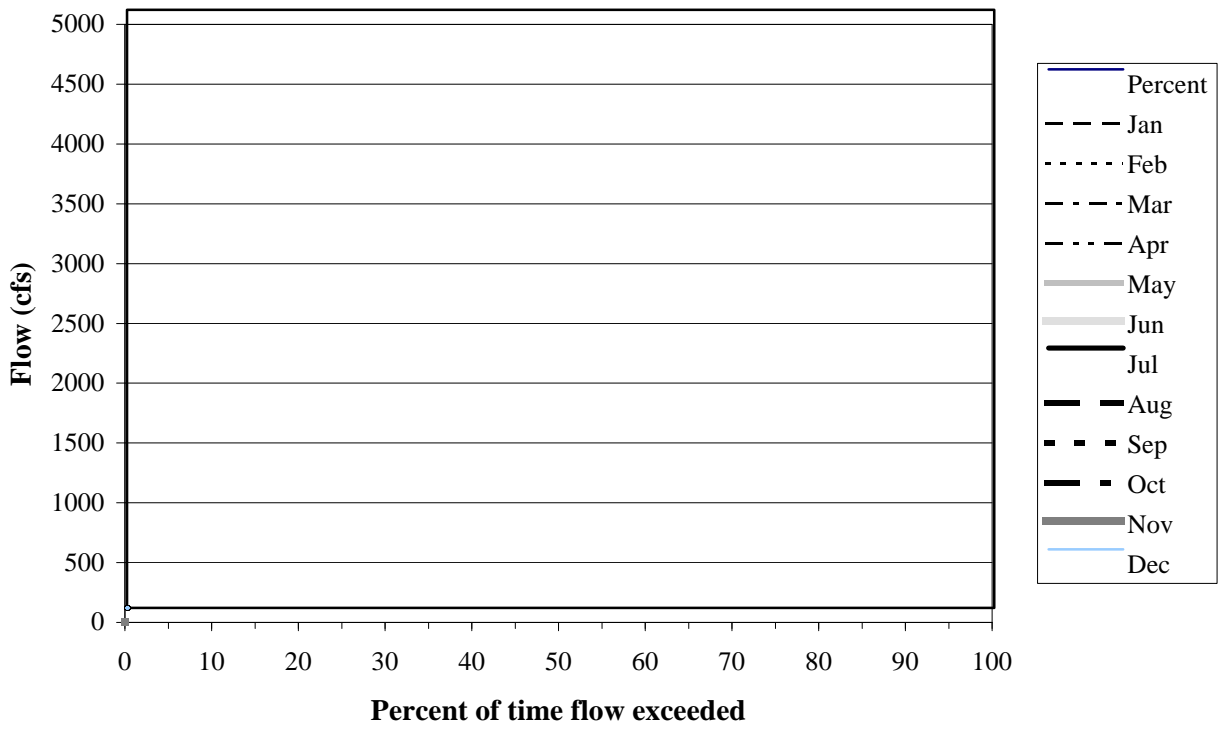
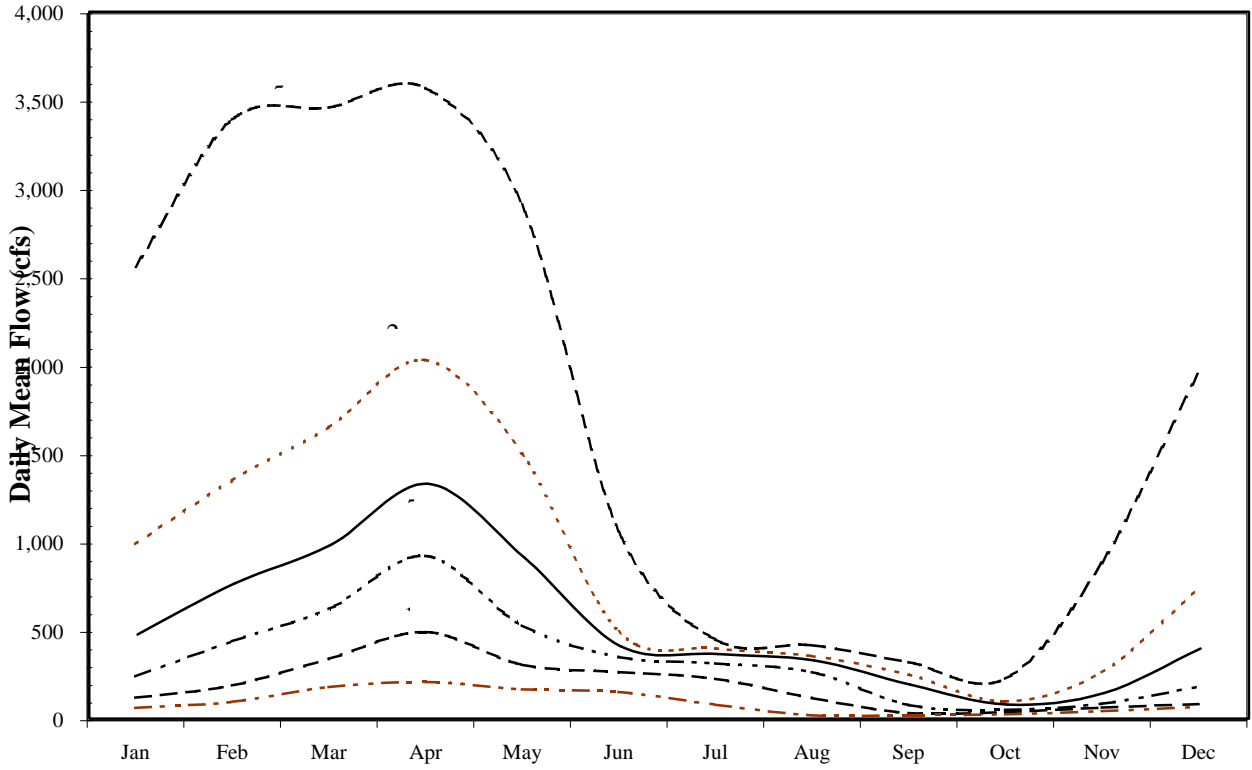
Flow Exceedences for Feed Canal, Oregon
USGS 14029000 (FCEO), period 1948-1997

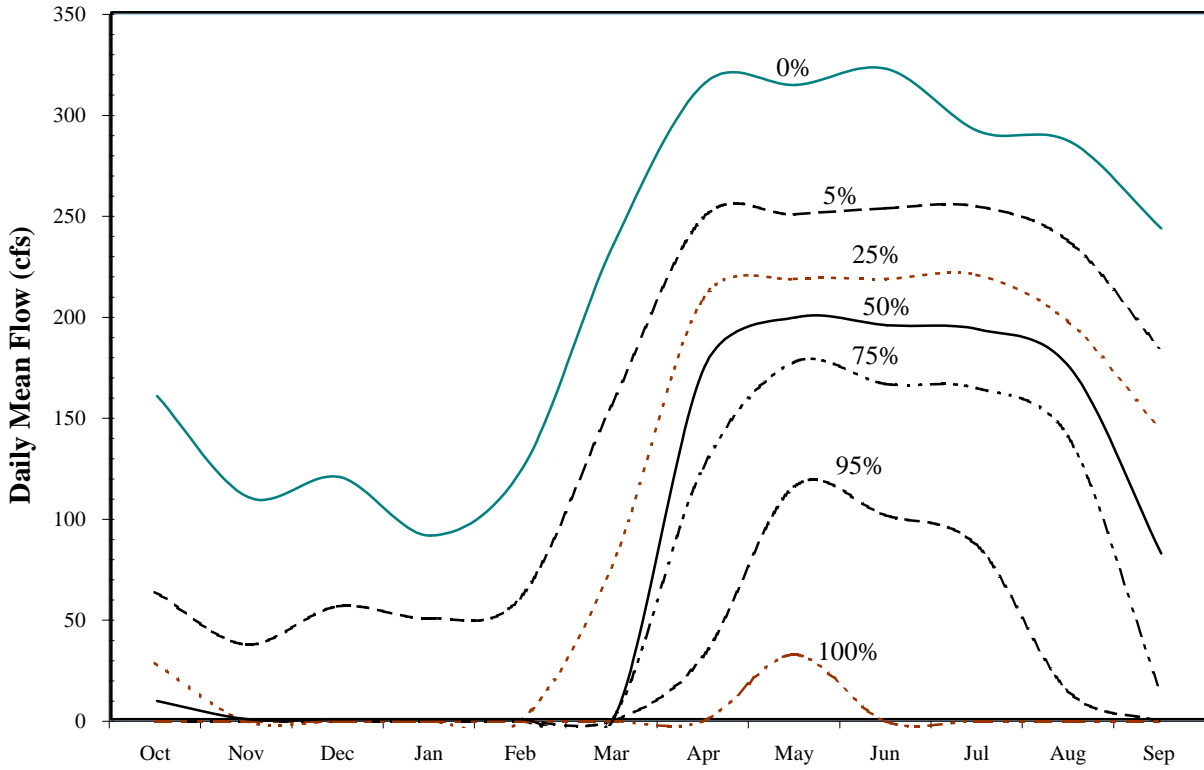




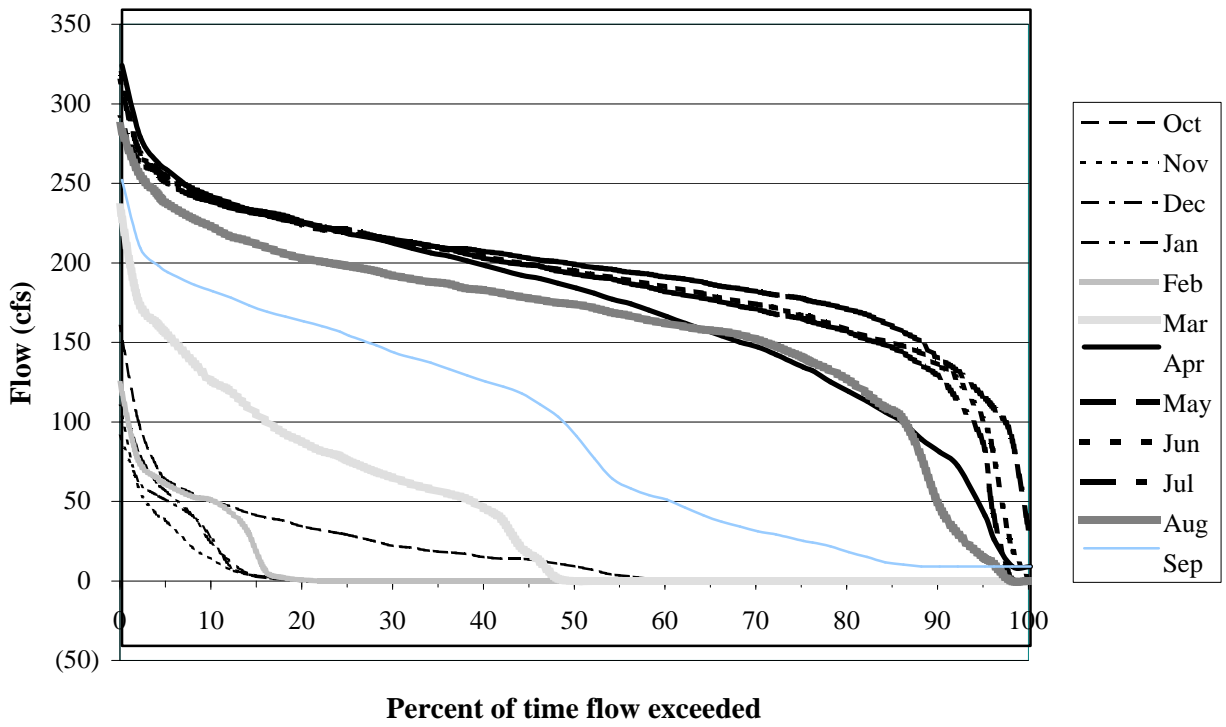
Flow Exceedences for Umatilla River below Feed Canal Diversion near Echo, Oregon
USGS 14026000 (UMUO), period 1993-1998

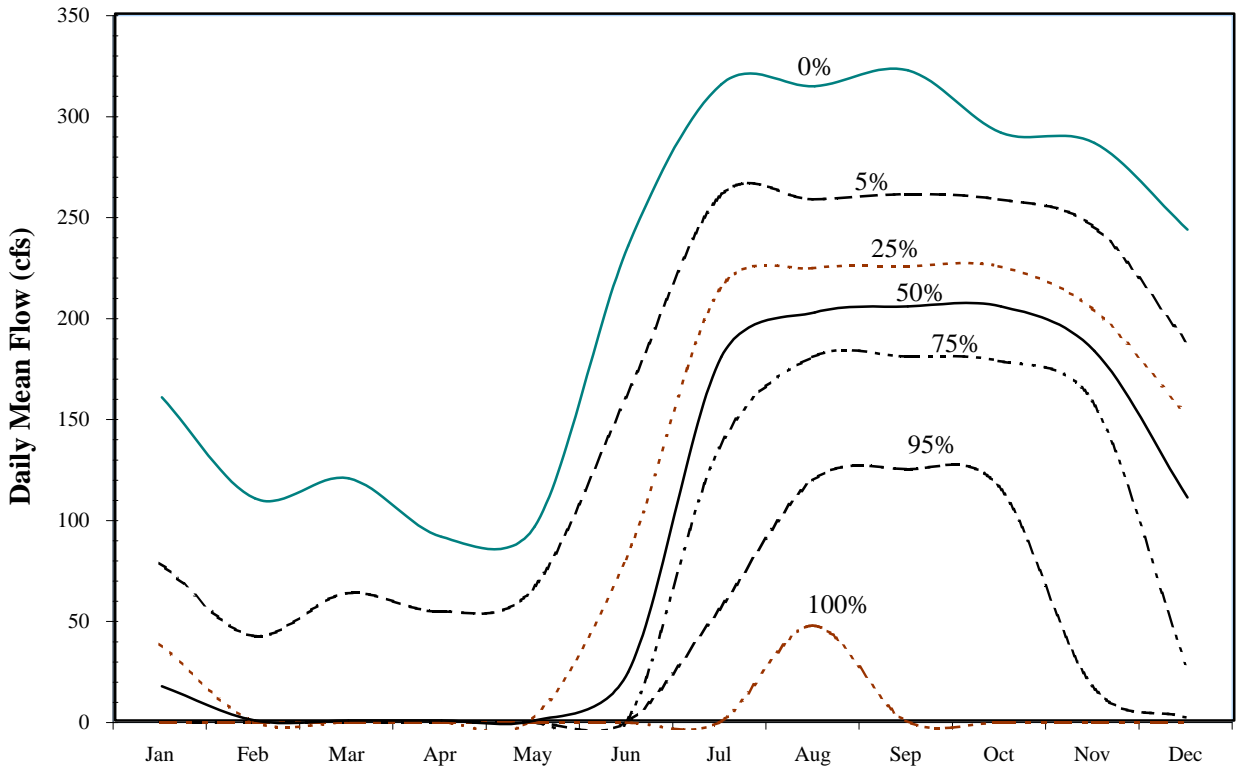




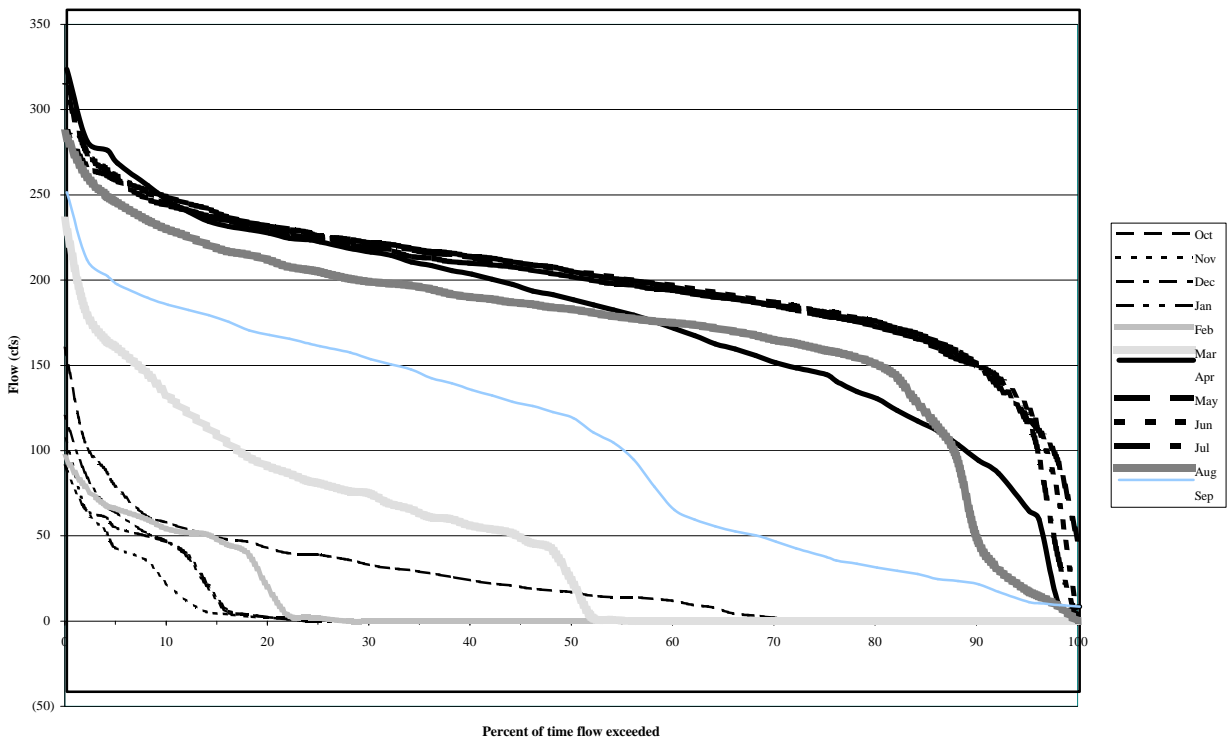


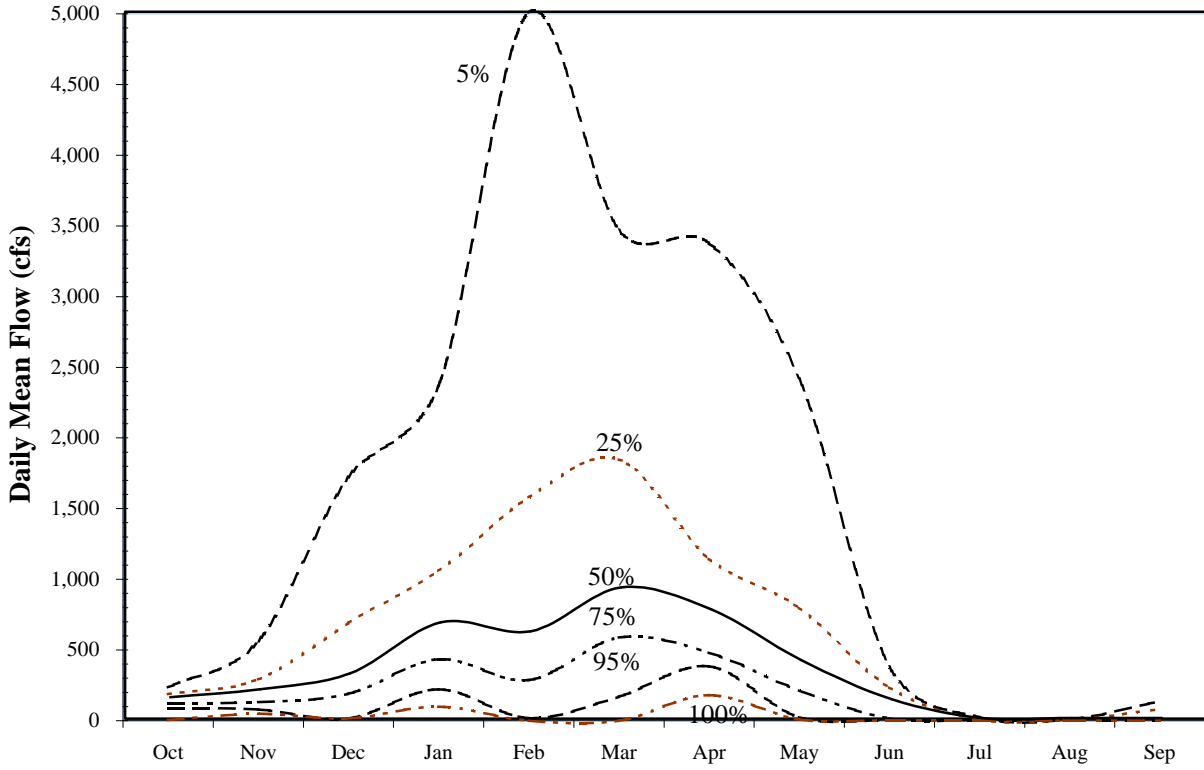
Flow Exceedences for Western Land Canal near Echo, Oregon
USGS 14026000 (WESO), period 1926-1998





Flow Exceedences for Western Land Canal near Echo, Oregon
USGS 14026000 (WESO), period 1948-1998





Flow Exceedences for Umatilla River at I-84 near Stanfield, Oregon
USGS 14031050, period 1993-1998

