SECTION C
HYDROLOGY

INTRODUCTION

This section provides the available river peak flow data for the Garcia River. This is the closest stream flow station to the Southcoast Streams WAU. The peak flow data is used to show the magnitude of storm events and when they occurred. High river peak flow events are indicative of the largest storms, with large storms typically comes high erosion and sediment transport events.

The Southcoast Streams WAU does not receive any significant snow accumulations that could contribute to rain-on-snow events. Current research shows possible cumulative effects from increased peak flows from forest harvest in rain-on-snow dominated areas (Harr, 198l). However, in rain dominated areas, increases in large stream peak flows (i.e. greater than a 20 year event) from forest harvesting are not found (Ziemer, 1981; Wright et. al., 1990). The Southcoast Streams WAU is a rain-dominated area in the temperate coastal zone of Northern California, therefore analysis on peak flow hydrologic change was not considered necessary

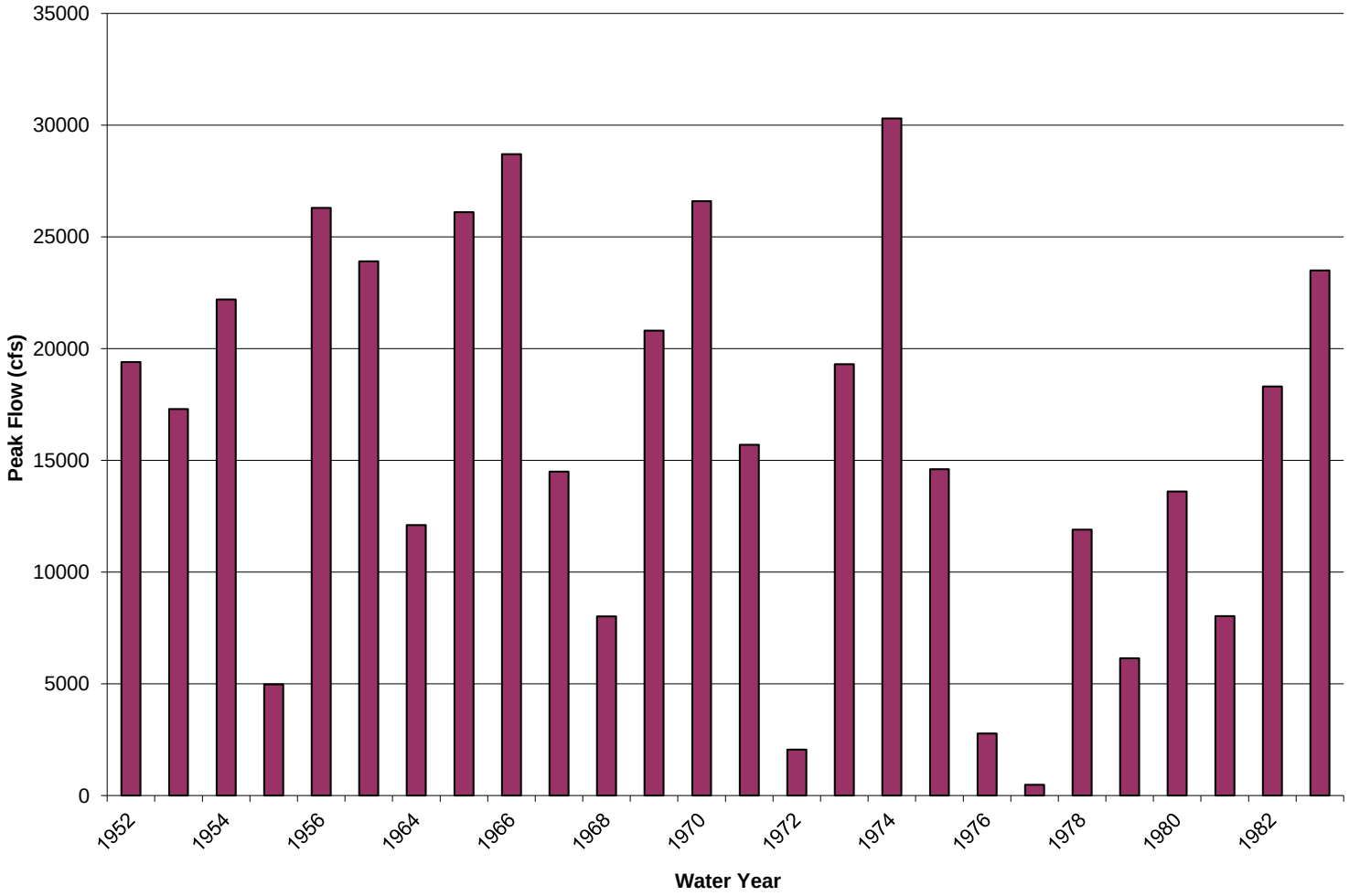
Peak Flows

The peak flow information was taken from the United States Geological Survey (USGS) gage 11467600, Garcia River, from water years 1952-1983. The USGS annual peak flow series was used to estimate the recurrence interval of the flood events of the Garcia. An extreme value type I distribution (Gumbel, 1958) was fitted to the data. Table C-1 shows the estimated recurrence interval for peak discharges in the basin.

Table C-1. Flood Recurrence for Peak Flows of the Garcia River, 1952-1983.

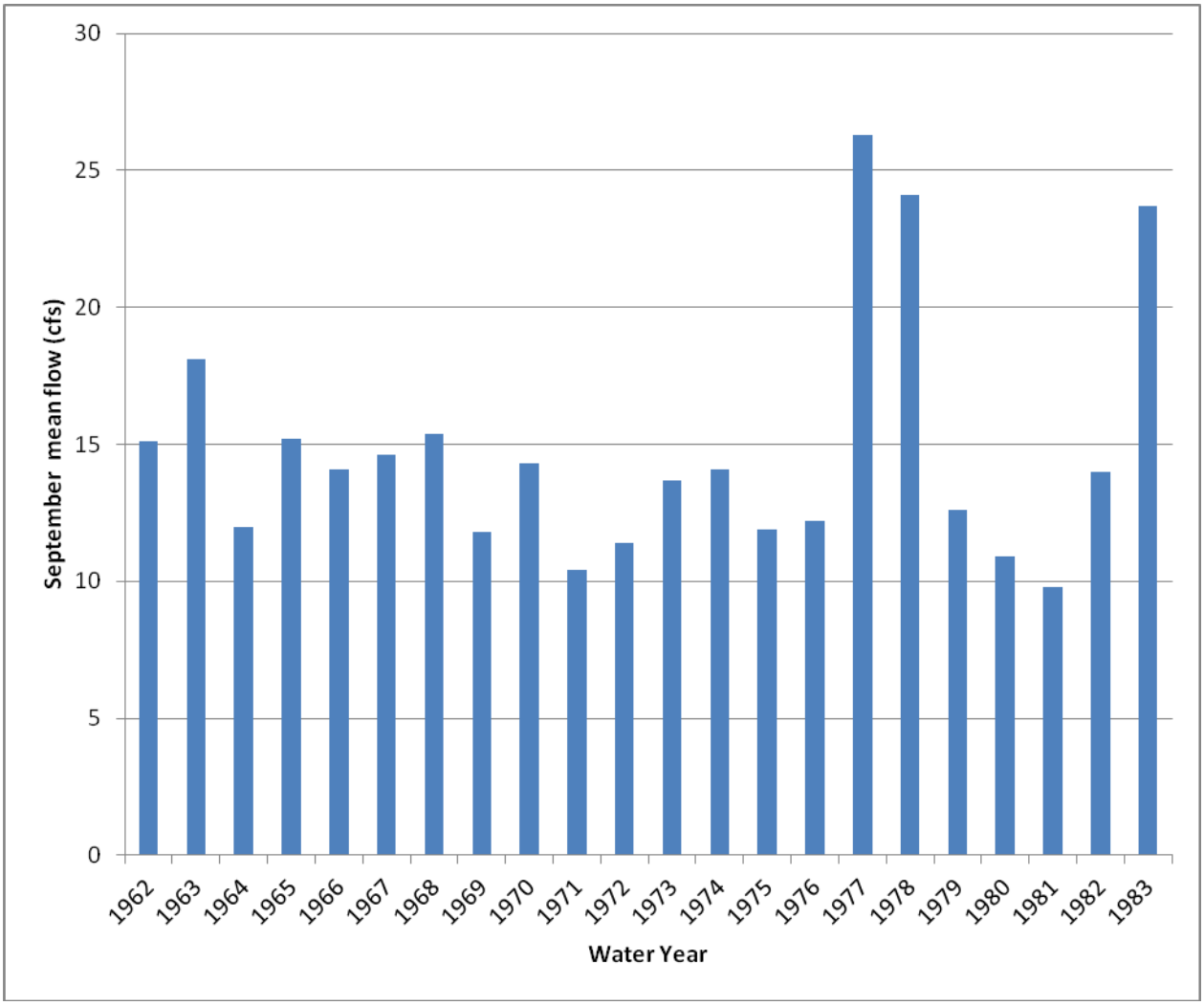
Recurrence Interval (years)	Peak Discharge (cfs)
1.1	6,209
2	14,631
5	22,323
10	27,415
25	33,849
50	38,622
100	43,360

Figure C-1. Peak Flows for the Garcia River, 1952-1983



Using the peak flow record from 1952-1983, the flood of record was in January 1974 (30,300 cfs) calculated to be about a 17 year event for the Garcia River (see Table C-1). The second highest peak flow occurred in the 1966 water year. The third highest peak flow occurred in 1970. This is similar to most of the stream flow stations in the Mendocino and Sonoma County areas. This suggests that Southcoast Streams has been subjected to similar storms and magnitude as other watersheds of the area. Unfortunately the gauge was shut down in 1983 and no recent data exists for this site.

Below is a chart of the mean monthly flow for September for the Garcia River. This chart is shown to indicate the trend in late-season flows. It is interesting to note that in 1976-1977 the Mendocino Coast experienced a severe drought with some of lowest annual average flows of record, but, according to the data below, the highest mean monthly flow for September in the Garcia River was in 1977.



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