

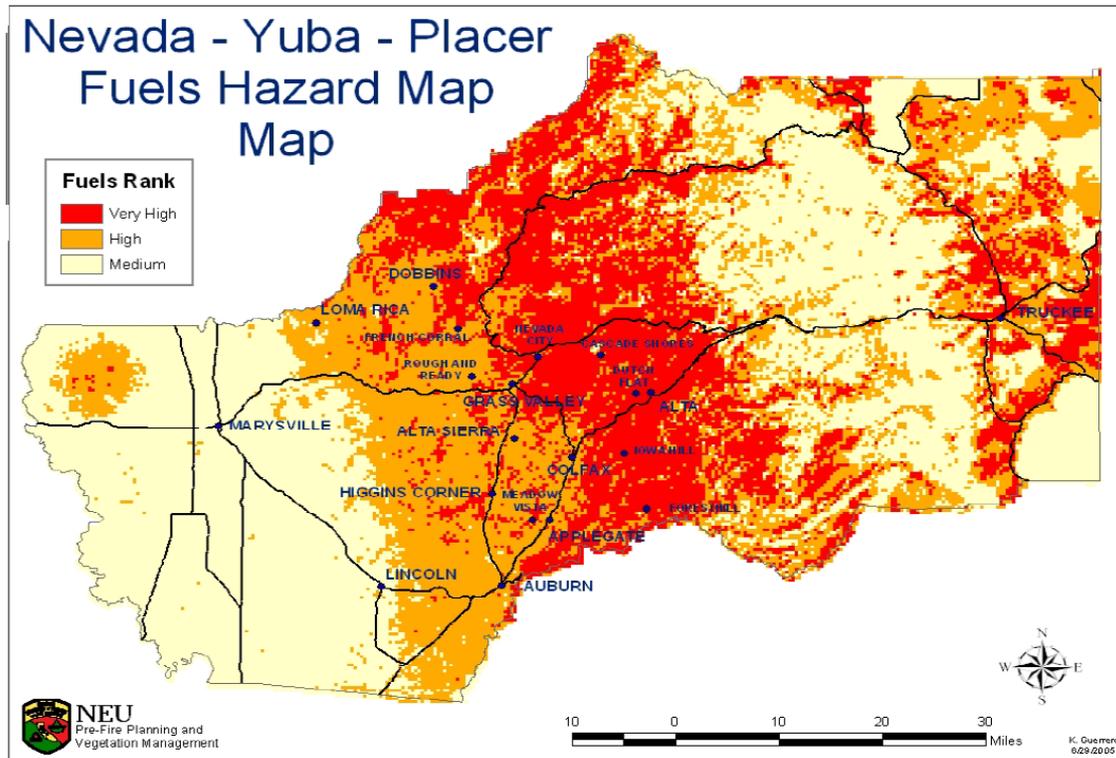
## 6 FUELS

As described earlier in this document, the vegetation within the Nevada-Yuba-Placer Unit is quite varied. The general vegetation types include grassland, oak woodland, mixed conifer, true fir, and brush. The Fire Plan assessment process includes fuels as a major component. The hazardous condition of these fuels was determined by examining the detailed fuels and fire history data layers using GIS and field validation. The hazardous fuels rank was developed using the following methodology.

The hazardous fuels ranking system is based on estimates of potential fire behavior associated with the particular fuel type; and as such, have a direct relationship to the characteristic fire supported by these fuels. The fuel rank is an integrated index of fire behavior characteristics – rate of spread, fireline intensity, heat per unit area, etc. – that are a result of that fuel complex burning under a particular set of weather conditions. The intent is to provide a basic means of stratifying the landscape into areas of moderate, high, and very high hazard as it is related to fire behavior potential. The rankings were determined by using the underlying fuel models in conjunction with the BEHAVE fire behavior prediction system. The various fuel models were then plotted on the fire characteristics chart commonly used to evaluate resistance to control (Rothermel, 1983), where a fuel model's rate of spread is plotted against its heat per unit area. This plot represents fire behavior calculations conducted under severe fire weather conditions, where fires are more likely to escape. The farther the flaming front is from the origin, the greater the fire behavior potential, and hence, the greater the resistance to control. As these fuel models only reflect surface fire behavior, additional information regarding crown fire potential and slope was also included in the development of the ranking scheme.

In general terms, only those fuel complexes where there is a large volume of available fuels (yielding high heat per unit area) and at least a moderate expected rate of spread under severe environmental conditions, were given a hazard rank of "Very High". "High" and "Moderate" ranks were assigned to lesser fuel volume types where either heat per unit area or spread rate was expected to be lower. Heavy brush and heavy forest fuel types received "Very High" ranks. Moderate brush, pine/grass, intermediate load conifer, and light logging slash received "High" ranks. Grass and low volume forest types received "Moderate" ranks.

The following map exhibits the Hazardous Fuels Rank for the Unit.



## 7 FIRE WEATHER

The Fire Plan assessment process includes fire weather as a major component. The method to be utilized to rank the geographic areas as to fire weather severity is the following:

1. The fire weather history, in terms of average number of days of severe fire weather, is plotted and mapped by geographic area.
2. Geographic areas are ranked by the average number of days of severe fire weather during peak fire season. This allows the identification of the higher risk areas in terms of probability of fires occurring during periods of severe fire weather.

This methodology requires a special computer program to analyze tens of thousands of fire weather station reports. At the time of the implementation of the Fire Plan in the Nevada-Yuba-Placer Unit, this computer program was in development but not available for use. In lieu of this process, NYP used the following method:

1. Geographic areas within the unit were assigned to a WIMS fire weather station that was representative of the fire weather for that area.