

of storm-centred data in non-orographic areas in the region of interest, however, precluded the development of such relations. It was therefore necessary to develop depth–area relations for extreme storms (excluding tropical storms) in regions where orography had little or no influence on storm precipitation. These relations were used to adjust the 25.9 km² convergence PMP values for area in construction of the index map for this study (United States Weather Bureau, 1961a). They are also used to adjust the values from the index map for various basin area sizes.

3.3.4.6 Construction of convergence PMP index map

The steps described below for the construction of the 6-hour 518 km² convergence PMP index map (Figure 3.16) for February in the example study apply equally well to similar index maps for other durations, basin sizes and months, if required.

- (a) After an appropriate grid had been drawn on a suitable map base, the maximum moisture for

February was determined for each grid point and plotted. These maximum moisture (precipitable water) values were first obtained from the maximum persisting 12-hour 1 000-hPa dewpoints for February (Figure 3.12), and then adjusted for effective elevation or barrier height (Figure 3.15).

- (b) The adjusted precipitable water value at each grid point was then multiplied by the maximum 6-hour *P/M* ratio for February (Figure 3.13). The values thus multiplied represent 6-hour 25.9 km² convergence PMP.
- (c) The convergence PMP values computed as above were then adapted to 518 km² by a reduction factor (0.80) obtained from the depth–area relation (not shown) described in section 3.3.4.5. Isopleths were then drawn on the basis of these areally reduced values, to produce the index map of 6-hour 518 km² convergence PMP shown in Figure 3.16. The factors involved in the construction of this map showed little difference in January, so the index map was used without seasonal adjustment for both January and February, and was so labelled.

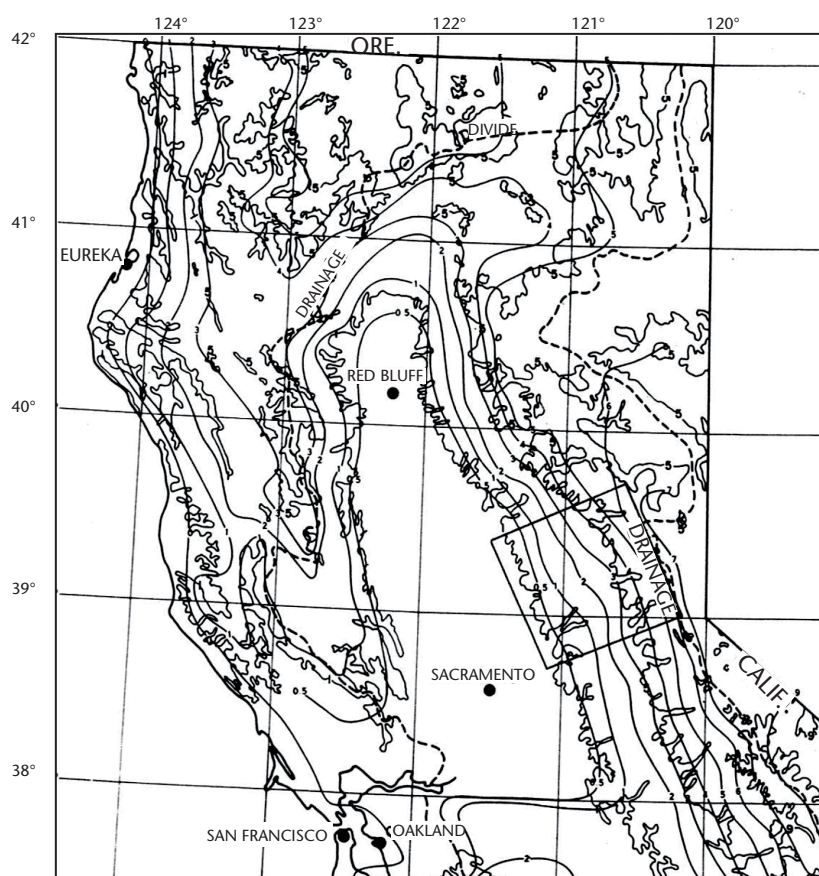


Figure 3.15. Effective elevation and barrier heights (30.5 m) in northern California (square delineates Blue Canyon orographic model test area; United States Weather Bureau, 1961a)