Lorenzo Point, nearly the entire cliff section is composed of Purisima Formation and is a relatively recent feature that formed after the emplacement of the Santa Cruz Yacht variations along this section of seacliff.

This map presents short-term seacliff retreat through the identification of slope failure styles, spatial variability and the influence of storms or seismic activity, than occurs during decades of normal weather or seismic events. The results from this study are intended to provide quantitative information that may be useful to land-use planning and land owners.

Monterey Bay and San Lorenzo Point act as failure planes for blockfalls. The wave climate is well documented for the northern Monterey Bay and provides the spatial and temporal data necessary to identify the processes responsible for retreat of the seacliffs, where visible slope failure or retreat of the top edge of the cliff have occurred.

Monterey Bay Area
Aerial photography from Coastal Aerial Mapping System (CAMS), February 9, 1998

Figure 5.
Orthophotomosaic (CAMS imagery flown 2/9/98 at a scale of 1:7500) of Seabright Beach showing retreat magnitude and cliff morphology controlled by the jointing and blockfalls. Along the lower part of the cliff, debris falls occurred between the time periods 1989 to 1998.

Figure 6a and b.
Retreat trends for each of the time periods investigated are shown in figure 6a. Failures commonly occur on the face of the cliff, and the location of failures is shown in figure 6b. Failures commonly occur on the face of the cliff, and the location of failures is shown in figure 6b.

Table 1 shows the total extent of slope failure for each of the time periods investigated. The data is further subdivided to show the type of slope failure for each period from October 18, 1989 to March 6, 1998. These include debris falls, block and debris flows, and debris slides. The table shows the total extent of slope failure for each period from October 18, 1989 to March 6, 1998.

Table 2.
The table shows the total extent of slope failure for each period from October 18, 1989 to March 6, 1998.

Winter 1998 - February 1998
October 1989 - Winter 1998

Figure 8 demonstrates the nearly continuous occurrence of failures along this section of cliffs. However, the cliff morphology is crenulated and as a result the spatial and temporal relationship between failures, and the type or style of failures, is difficult to interpret. The table shows the total extent of slope failure for each period from October 18, 1989 to March 6, 1998.

Figure 9.
Linear extent of cliff section experiencing slope failure for each of the time periods investigated. The data is further subdivided to show the type of slope failure for each period from October 18, 1989 to March 6, 1998.

Figure 10.
The table shows the total extent of slope failure for each period from October 18, 1989 to March 6, 1998.

Figure 11.
The table shows the total extent of slope failure for each period from October 18, 1989 to March 6, 1998.

Figure 12.
The table shows the total extent of slope failure for each period from October 18, 1989 to March 6, 1998.

Figure 13.
The table shows the total extent of slope failure for each period from October 18, 1989 to March 6, 1998.