



Stage 1

Cliff formed in the terrace deposits is nearing equilibrium, as indicated by the low slope angle. Lower half of cliff formed in the Purisima Formation is being undercut by wave erosion. Portions of East Cliff Drive are now in this condition.

Interlude A

Wave erosion continues to undercut cliff to the point where it will collapse. Top of the cliff is experiencing little, if any, erosion.

Stage 2

Undercut cliff collapses. A large mass of debris is deposited in the surf zone and must be removed by wave action. Cliff is now vertical. While wave erosion removes debris from surf zone, the upper half of the cliff now begins to weather and fail as a series of small landslides. East Cliff threatened.

Interlude B

Continued failure of the top of the cliff undermines portions of East Cliff Drive. Portions of the road must be closed. The debris from the rock fall of Stage 2 is now completely removed by erosion.

Stage 3

Erosion continues to cut back top of slope. Almost half of East Cliff Drive eroded away. Undercut notch deeper. Cliff ready to collapse. Note similarity of the cliff profile to Stage 1.

Interlude C

Erosion continues at both the top and the base of the cliff, but undercutting by wave erosion causes cliff to collapse.

Stage 4

Cliff has collapsed. Once again a large mass of debris has been deposited in the surf zone. Cliff is once again nearly vertical. Note similarity to Stage 2. East Cliff Drive is at the top of a steep cliff.

Interlude D

Wave erosion removes rock debris from the surf zone, while the terrace deposits experience a phase of accelerated erosion. Upper portion of cliff face experiences rapid retreat.

Stage 5

Cliff top erosion destroys East Cliff Drive. Wave erosion begins to cut a new notch at the base of the cliff.

Source: Weber 2000

**No Project
Time Sequence of Erosion**

Santa Cruz, California

Figure 6-5