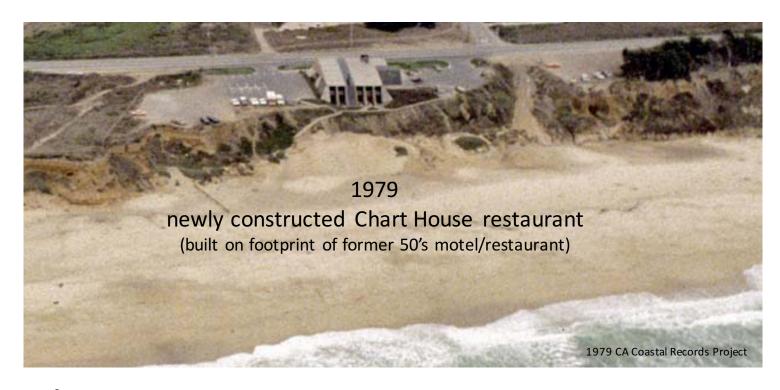
# Shoreline armoring to protect development in Montara, Moss Beach, & Princeton

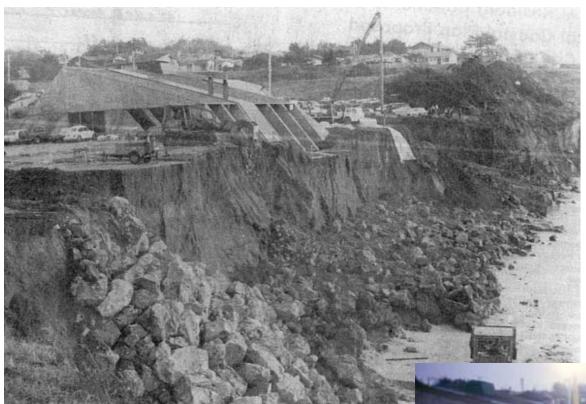
Midcoast Community Council December 9, 2015 (L. Ketcham)

#### Montara Beach



Only 4 years after construction, in 1983 -- \$750,000 heap of rocks, 460 feet long, installed on the public beach





#### Montara Beach

1983 El Niño storms – emergency armoring for the Chart House restaurant

Historical erosion annual averages can be misleading.

Coastal bluff erosion often occurs in dramatic seemingly unexpected events during winter storms.

The reaction has been piecemeal emergency armoring to protect development without regard to aesthetics, coastal access, or long-term area shoreline dynamics.







<u>Aesthetics</u>: Alien boulders and concrete slurry contrast harshly with the surrounding natural landscape and scar the view.

### Maintenance & useful life: Over 30 years old, the steep wall of

boulders protecting the restaurant is undermined and hazardous.

#### Moss Beach: Reef Point Rd & Arbor Lane (Juliana to Sunshine Valley)

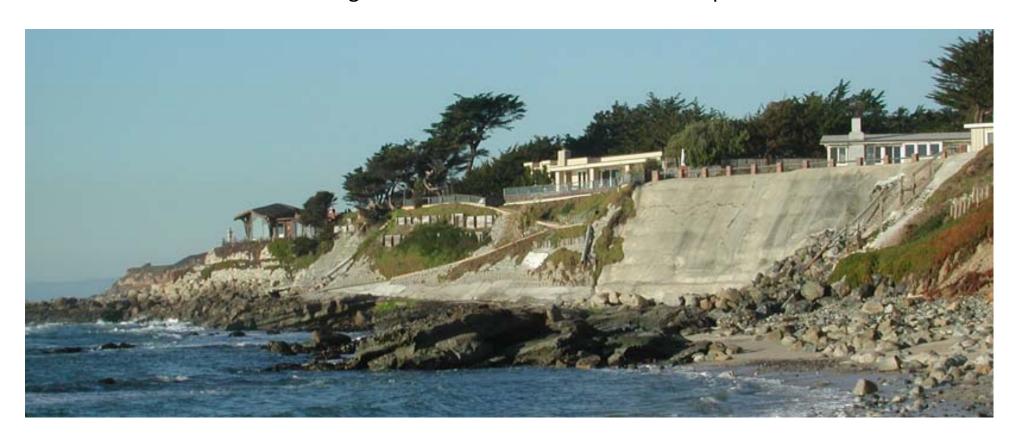


Reef Point Rd development and complete coastal armoring occurred prior to 1972. Extensive repairs have been necessary over the years.

Arbor Lane was subdivided in 1972 and developed, leaving a scenic easement on the shoreline, although half of that was armored in the 1980's to protect the nearest house.



### Reef Point Rd 60's-era coastal armoring viewed from Fitzgerald Marine Reserve beach access point 2002



#### Moss Beach: Sunshine Valley to Fitzgerald Marine Reserve Beach Access Ramp



Prior to 1983 public beach access existed both north and south of the FMR ramp.

1980's armoring rocks placed on the public beach to protect 3 homes — County approvals noted the wide beach and that lateral access would not be blocked.







FMR to Sunshine Valley -- 2015

Even at low tide, public access along the shoreline is difficult and hazardous due to deteriorating riprap with precariously perched boulders overhead and strewn all over the beach.



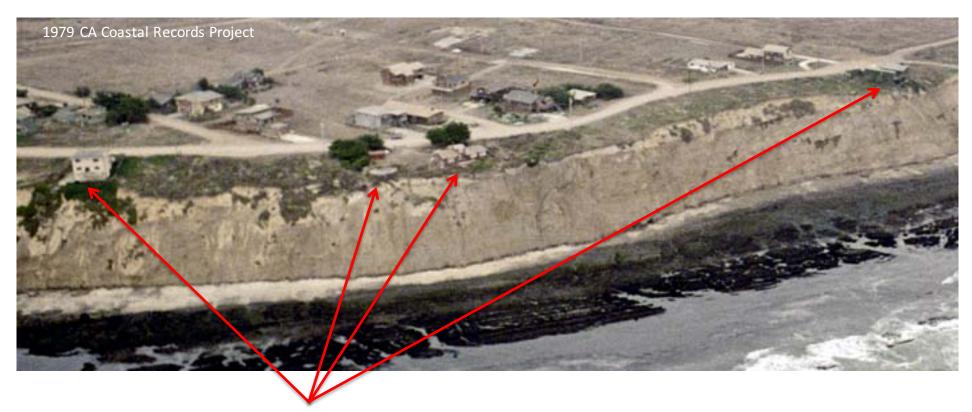
#### Historic house at 101 Beach St --

Threatened by bluff erosion in 2002, instead of armoring the cliff, the house was moved inland onto a neighboring parcel.





#### Seal Cove development west of Ocean Blvd



All 4 houses seen in 1979 along the cliff edge have been demolished and removed.



Unpermitted armoring and lack of enforcement by County or State



Unpermitted 1970's seawall undermined by loss of beach.

Wave energy reflecting off shoreline armoring structures undercuts the beach and hastens erosion in front of the structure and neighboring properties.

#### Princeton shoreline

Rubble-strewn sandy beach at foot of Columbia – inevitable result of unmaintained armoring



Piecemeal armoring leaves protected development on a peninsula due to accelerated erosion of adjacent bluff.



Princeton shoreline

County approved shoreline development in late '90's. Emergency armoring added before construction even complete.

101 Vassar development permit appealed to CCC in 1999 -- condition added:



Deed
restricted
prohibition no shoreline
protective
device now
or in future.

## Coastal Commission conditions added to shoreline development permits on appeal

(e.g. 1999: 101 Vassar; 2012: 263 Nevada; and 2014: 354 & 358 Princeton)

- Assumption of Risk, Responsibility, Waiver of Liability, and Indemnity Agreement regarding coastal hazards -- episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunami, coastal flooding, landslides, bluff and geologic instability.
- Shoreline armoring prohibited now or in the future.
- If the development is threatened by coastal hazards in the future that would typically bring about a shoreline armoring response, the Permittee shall remove/relocate threatened elements of the development away from such danger.
- Any debris that falls from the bluff top onto the beach or coastal waters shall be immediately removed and disposed of properly.
- Recorded Deed Restriction imposing these permit conditions as covenants and restrictions on the use and enjoyment of the property.

#### Vallemar Bluff

- unarmored
- proposed for development

The only way to save this beautiful shoreline is to give it plenty of space and allow it to retreat naturally.



