

Moss Beach Shoreline Erosion & Armoring



Reef Point Rd 60's-era coastal armoring, viewed from Fitzgerald Marine Reserve

Reaction to the natural process of coastal bluff erosion has been piecemeal emergency armoring to protect development, mostly without regard to aesthetics, coastal access, or long-term area shoreline dynamics.

by Lisa Ketcham
April 2022 update

Vallemar Bluff at Juliana

Just to the north of the previous image, a different result in 2019:

Four houses approved on 2.5 acres, with conservation easement over the rare coastal prairie habitat, and provision for the public trail to retreat inland when required by bluff erosion, plus deed-restricted prohibition of future shoreline armoring.



Reef Point Rd & Arbor Lane (Juliana to Dean Creek)



1972

CA Coastal Records Project

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

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.



2013

199 Arbor Ln
2020 CDP
no future armoring

CA Coastal Records Project

Dean Creek to Fitzgerald Marine Reserve Beach Access Ramp



1979 CA Coastal Records Project

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

County 1980's armoring permit approvals noted the wide beach and that lateral access would not be blocked by riprap placed on the public beach to protect 3 homes: 97 & 101 Beach, and 201 Nevada



2013 CA Coastal Records Project

199 Arbor Ln, 2018 CDP:
no future armoring

263 Nevada, 2012 CDP:
no future armoring

Managed Retreat

Threatened by bluff erosion in 2002, instead of armoring the cliff, the historic house at 101 Beach St was moved inland onto the neighboring parcel, 263 Nevada.

In 2012 on appeal of CDP for expansion of the relocated house, CCC prohibited future armoring.



Peninsulas of rock expand across the beach at FMR
as riprap deteriorates and surrounding cliffs erode naturally.
March 2017



2022 shoreline, Dean Creek to San Vicente Creek

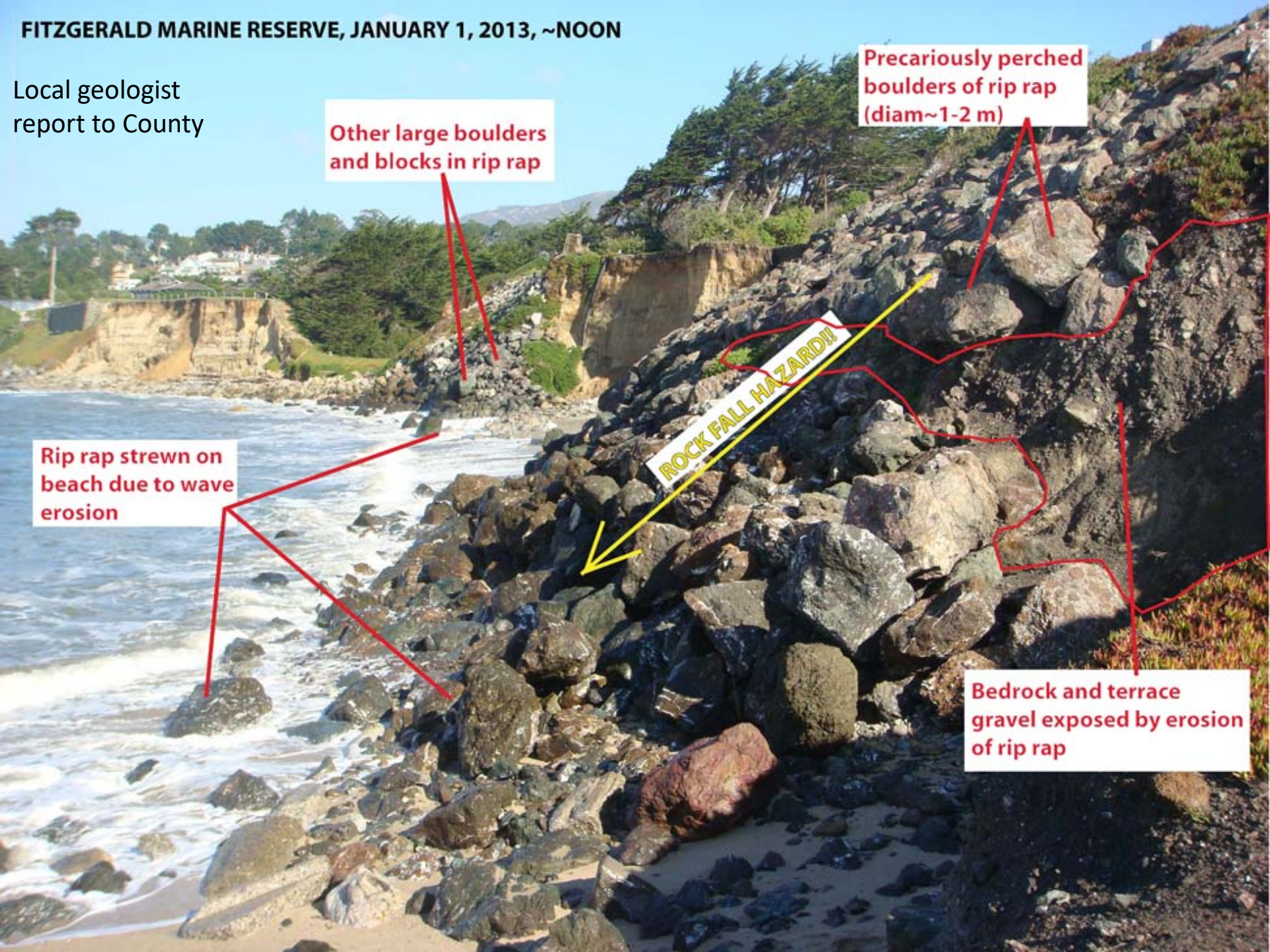


Cliff erosion is cutting in behind the riprap.

Red arrows at 97 Beach and 201 Nevada show where those houses on large lots could be moved away from the eroding shoreline.

FITZGERALD MARINE RESERVE, JANUARY 1, 2013, ~NOON

Local geologist
report to County



Other large boulders
and blocks in rip rap

Precariously perched
boulders of rip rap
(diam~1-2 m)

Rip rap strewn on
beach due to wave
erosion

ROCK FALL HAZARD!!

Bedrock and terrace
gravel exposed by erosion
of rip rap



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.

New sign was County's response to geologist's 2013 report of rock fall hazard.



The natural beauty of the coastal cliffs destroyed, and public access impeded and endangered from above and below by hard armoring.

FMR Moss Beach Reef Overlook



-- constructed of rock and concrete rubble on the shoreline at San Vicente Creek
-- before the Coastal Act and before the Marine Reserve was established in 1969.

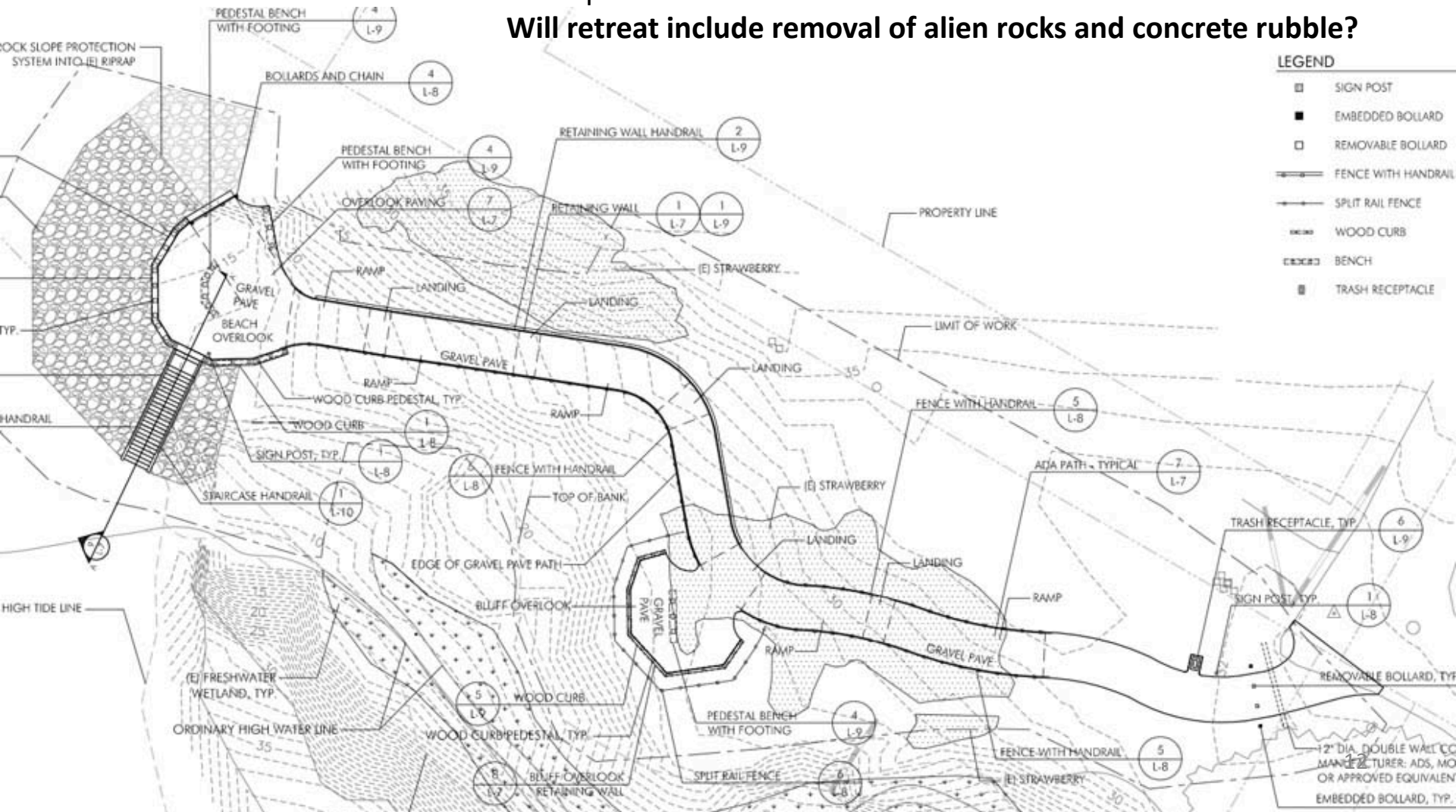
(Fleet of **orange** cones are relatively new feature. Wouldn't **green** or **blue** cones work just as well?)

Moss Beach Reef Access & Overlook

2010 plans for \$2.5 million access ramp expansion with 10.5-ft wide asphalt road, 3-ft wide shoulders, retaining walls up to 6-ft high, and enlarged rock platform on the beach. Plans shelved due to public concerns about being over-engineered.

Managed retreat is planned as the overlook degrades, per 2016 FMR Master Plan Assessment, but repairs continue to be made.

Will retreat include removal of alien rocks and concrete rubble?





Native landscape restoration at reef access trail along San Vicente Creek 2016

Seal Cove development west of Ocean Blvd

1979 CA Coastal Records Project



All 4 houses seen here in 1979 west of Ocean Blvd have been relocated or demolished.

Ocean Blvd between the Distillery and San Lucas was permanently closed by 2011 due to ongoing landslide, followed by paving of some new inland streets for access.

To the north and south of Seal Cove neighborhood, the cliffs at FMR County Park can erode naturally with gradual retreat of any trails and fencing.

Deed-restricted conditions of approval prohibiting future armoring added to shoreline Coastal Development Permits per expectation of the Coastal Commission

- 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, tsunamis, coastal flooding, landslides, bluff and geologic instability.
- Shoreline armoring prohibited now or in the future.
- Applicant shall remove or relocate development when any government agency with legal jurisdiction has issued final order that structure is unsuitable for habitation or use without shoreline protective device. 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.
- Full disclosure to potential buyers.

Coastal Commission on appeal:

1999: Vassar 101

2012: Nevada 263

2014: Princeton 354 & 358

2020: Arbor Ln 199*

County CDP:

2019: Vallemar Bluff 4 houses

2021: Ocean Bl 989

2022: Ocean Bl at Precita

*Added by CCC on appeal in 2020: Prohibit deep piers & tie-back foundation which itself constitutes a form of shoreline armoring. Apply prohibitions to adjacent steep banks of creeks/ravines >10 ft high which fall under LCP definition of coastal bluff.

Ocean Blvd between Precita & Bernal



Additional coastal hazard condition of approval for mid-block development 4/13/2022: **County shall not be required to maintain access and/or utility infrastructure** to serve the approved development in the event that coastal hazards eliminate access to the site for emergency vehicles, residents, and/or guests due to degradation and eventual failure of Ocean Boulevard as a viable roadway.

Other Midcoast Shoreline slide presentations:

Montara State Beach

Princeton Shoreline

Surfers' Beach & Miramar