

Our Ocean Backyard — *Santa Cruz Sentinel* columns by Gary Griggs, Director, Institute of Marine Sciences, UC Santa Cruz.

**#60 July 31, 2010
Armoring the coast**



The timber seawall at Seacliff State Beach has been built, destroyed by wave and rebuilt eight times over the past 80 years.

Twenty-seven years ago the entire coast of California was hammered by the most severe El Niño storms in perhaps half a century. During the first three months of 1983, twelve large storms hit the coastline and all but three of these arrived at times of high tides. Sea levels were a foot to nearly two feet higher than predicted along the state's coast due to a combination of warmer water, storm surge, and an El Niño driven bulge in the sea surface that moved north from the equatorial region. The combination of an elevated sea level, high tides and large storm waves inflicted over \$200 million in losses (in 2009 dollars) as houses, commercial buildings, parks, harbors and public infrastructure were damaged or destroyed.

In low-lying downtown Capitola, waves washed into the beachfront Venetian Court and the restaurants along the Esplanade as debris and seawater were washed a block inland. Along the northern bay shoreline, homes were damaged along Rio

Del Mar's Beach Drive. Storm waves overtopped the riprap revetment protecting the homes along Via Gaviota in Seascape, broke through sliding glass doors and washed into oceanfront living rooms. Much of the newly completed timber seawall at Seacliff State Beach was destroyed, for the eighth time in 60 years.

Although many miles of seawalls and riprap already existed along California's coastline, the 1983 winter storm damage generated a flurry of requests from Crescent City to San Diego to rebuild old seawalls damaged or destroyed during the winter storms or construct new ones. While many permits were subsequently issued by city and county planning departments, as well as the Coastal Commission, concerns also began to be voiced about the effects of additional seawalls and riprap on the shoreline. The decision to allow armor or not has become an increasingly contentious issue in hearing rooms from one end of the state to the other. Ten-percent, or 110 miles of the state's 100-mile coastline have now been armored. The highest concentration of seawalls and riprap are in southern California, where 33% of the entire coastline of Ventura, Los Angeles, Orange and San Diego counties has now been armored.

At the Coastal Commission level, the guiding language in the original Coastal Act of 1976 was somewhat ambiguous as it related to seawalls. One section stated that new development was not to be dependant on the construction of shoreline protection devices such as seawalls or riprap. Another portion of the Act declared that seawalls and revetments shall be approved if an existing development is threatened by erosion. Attorneys, property owners and Coastal Commission staff have been debating ever since as to what constitutes an existing development: existing at the time the Act was approved, or existing when the permit was requested?

Today permits for new seawalls have become the exception rather than the rule. Every proposal for a new seawall undergoes careful scrutiny. Larger structures, such as the East Cliff Drive/Pleasure Point bluff stabilization project now being completed, typically go through an extensive Environmental Impact Report process. In that project's 280 page final EIR, which stretched out over 8 years, visual, biologic, hydrologic, geologic, recreational, traffic, cultural, and utility issues and impacts were all exhaustively analyzed. After considerable public input and review, as well as several hearings, the Coastal Commission approved the project based on the public benefits and the mitigation of significant impacts. More on Pleasure Point in two weeks.