Long Beach City College

The Long Beach Breakwater: How It Has Affected the Surfing Community

A Research Project Submitted to

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Introduction

The Long Beach Breakwater has dramatically influenced both the Long Beach community and the surfing community. By obstructing the ocean’s natural tendencies in this region, Long Beach has transformed from a surfing Mecca into an unoccupied, polluted beach. It has effectively ended Long Beach’s status as a surfing hot spot, stifled the sense of pride found in the community, and minimized the potential economic benefits associated with popular beach spots. Not only has the breakwater affected the Long Beach population; it has obstructed the region’s natural swell and wave energy and drastically diminished the quality of water.

Long Beach’s Past and Present

At one point Long Beach was a world-renowned surf destination with waves that rivaled many other popular So Cal surfing hot spots (Collins, 2009: Part 1). When surfing hit the scene in sunny Southern California Long Beach had a desirable wave break and hosted many competitions. The local bathymetry (the natural features and shape of ocean bottom) off the coast of Long Beach allowed for a fun, consistent, and clean wave (Ibid.). Millions of years of sediment build up streaming out of the Los Angeles and San Gabriel Rivers has created what is referred to as the San Pedro Shelf. The deep ocean depths suddenly reaching shallow ocean floors magnify wave energy, which reaches the shores of North Orange County creating a unique wave. Back in the day, waves could be seen breaking up and down the beach, however, there were a few particular places where waves were of better quality. At the southern end near the Alamitos bay entrance and the flood control...
channel, wave shape, height, and potency were greater than other areas (Ibid.).

Today, surf is scarce in Long Beach to say the least, however, during a strong west or Southern swell surf can be seen between 72nd and Claremont. Still, who would surf these rare waves when water quality is so poor.

Since the 1940s when the breakwater was constructed, water quality has dropped dramatically allowing for a virtual cesspool to accumulate off the Long Beach coast. The water is stagnant so there is no natural water flow to disperse the pollutants. During heavy rains, water runs unfiltered into the ocean creating a cauldron of bacterial “soup.” Orange foam can be viewed on the beaches bubbling with microorganisms and garbage. Unsuspecting tourists play in the water and fall victim to all kinds of infections and viruses. What is called the “Red Tide” is the result of extremely high bacterial cell concentration, which actually turns the water to a reddish hue caused by urban runoff, agricultural runoff, sewage spills, and the Los Angeles River (Surfrider, 2009). When humans come into contact with this they often experience burning sensations in the eye region and a desiccated harsh cough (Ibid.). In regards to the aquatic life of today, compared with past times, present day conditions would be similar to a desolate wasteland.

Comparing Seal Beach to Long Beach

The Surfrider Foundation conducted a feasibility study ordered by the City of Long Beach studying the possible removal of the East Breakwater and the associated effects of the increased surf. In order to accurately calculate the future wave conditions accurately, Surfline analyzed daily surf reports in Seal Beach and
Bolsa Chica Beach from January 1 2004- May 15, more than five years worth of observation (Collins 1). By doing so, they were able to develop an actual “Surfability Index” for the daily quality of surf for areas in Long Beach because Seal Beach is a great example of what waves would potentially look like if the East breakwater were removed. Both beaches feature the same bathymetry, the water depth relative to sea level (USGS CMG 1), and offshore islands shadowing variables. The largest waves in Seal Beach are formed by West and South swells.

Much like in Seal Beach, it is South and West swells that create big waves in Long Beach. The North Pacific Storms that generate swells from the west are much larger, and the San Pedro shelf will be able to focus the energy into the Long Beach area (Ibid: 9). In the event that a powerful North Pacific Storm occurs farther south than our West Swell window within 500 miles of the coast, long period swells will pass through the west swell window with enormous waves and little obstruction from the offshore islands. The San Pedro Shelf serves to enhance these waves which can be anywhere from eight to twenty feet in Long Beach, Seal Beach and Huntington Beach (Ibid: 10).

On December 21, 2005 a very large West swell arrived in this region and created eight to over twenty foot waves off of both the Esther Oil Platform and in Seal Beach (See Figure 1). On the same day, Long Beach had good three to five foot surf near Claremont Ave (Ibid: 12). Because of the extensive research Surfline has compiled, it is certain that if the East breakwater were removed, Long Beach would experience a tremendous change in wave quality.
Interview with Ed Hendricks

Ed Hendricks, a Long Beach local since 1928, can still clearly remember the days when Long Beach was hailed as “the Queen of the Beaches.” As a four year old who loved the ocean, he remembers clean waves, clean water and clean sand. In 1913, the King of Hawaii and the father of modern surfing, Duke Kahanamoku, brought the first surfboard to Long Beach (Duke 1). Prior to his visit, bodysurfing was a huge trend in the area. The first national surf competition took place in 1938 in Long Beach, with people from all over the nation traveling in order to experience a piece of what Long Beach had to offer. Ed was able to reap the benefits of the beautiful ocean that Long Beach once boasted, an ocean that today’s younger generations cannot comprehend. Without the knowledge of how the breakwater would transform Long Beach’s ocean, Ed recalls that at the time of its construction, nobody questioned it.

Because Hendricks’ past is so deeply embedded with the love of Long Beach, he has dedicated much of his time to the Surfrider Foundation in order to bring Long Beach back to what he remembers. Right now the reality is a beach that retains red ride longer than any other beach and one that receives the worst water quality every year compared to the surrounding beaches. Hopefully with the help of the Surfrider Foundation and other concerned citizens, the pollution found today in Long Beach will become history.
Interview with Mayor Bob Foster

In a recent interview with Mayor Bob Foster of Long Beach, the Mayor discussed potential issues with the removal of the breakwater. The Mayor, who was a surfer himself back in the 70s, is concerned that the entire removal of the breakwater may not be so great for Long Beach. The Mayor does not think the entire removal is feasible and that the decision is in the hands of the Core of Engineers. When asked about how he thought the removal would affect the city he responded, “I am not so sure that the removal would be such a good thing. Parking issues, property damage, and tourism are some of the issues the city will face.” He also said that there are only a handful of people who actually want it removed, and the estimated half-billion dollars it would cost to bring waves back to Long Beach does not seem realistic. Back in October of 2009, Obama approved for $90,000 to go towards the continued examination of the breakwater. When the Mayor was asked to comment he said, “it is just a drop in the bucket, and a lot more money is needed if something is going to be done.” With the enormous amount of money it will cost to remove or modify the breakwater the price tag may prove to be extremely high.

When water quality was brought up he referred back to past studies performed by Moffet & Nickel, which showed that water quality does not improve tremendously. The LA River will still continue to dump bacterial waste into Long Beach. He proposed that if water quality is to be improved the cities upstream, which contaminate the river need to do something; for example more bacterial catchers and filters. Not all of what the Mayor had to say was bad news. He did say that it is possible that there could be a lowering or partial removal at some point in
the city’s future. He proposed that more studies and stimuli should be done in regards to property damage, water quality, and the modifying, lowering, or removal of the Long Beach Breakwater.

Interview with Sean Collins

Sean Collins is the founder of Surfline and has been surfing in the Long Beach and North Orange county area throughout his life. He has spent much time researching the Long Beach breakwater, and has put most of his effort towards the removal of the entire East breakwater. Unlike the Surfrider Foundation, he does not feel it would be responsible to merely submerge the breakwater. He explained that regardless of the submerged breakwater being on maps and on the radar, it would essentially form an underwater reef with huge navigational hazards. Not only would it interfere with boats trying to get to Port, it would also create a fishing spot and unaware fisherman would be likely to capsize in the event of a large swell. In his opinion, having a submerged breakwater increases the likelihood of a big mishap that could end up taking lives. Not to mention, submerging the breakwater would do very little to improve the surf in the area.

According to Collins, the removal of the East breakwater would not have negative effects as far as the coast and beachfront properties. During the winter when bigger swells come through, Long Beach can build a seasonal berm, similar to the ones found in Surfside and Seal Beach. In fact, he stated that with the removal of the breakwater the natural ebb and flow of the area would be restored because west
swells would be able to flow through. This would restore a balance in the beach and combat erosion issues.

Collins has only heard stories of the huge waves found in Long Beach during the 1930s, however he still remembers the days when there was a Bay Shore Surf Club in the 1960s, which would frequent Long Beach spots like Claremont, 72nd and 60th street. During that time, sand from the Seal Beach River, the San Gabriel River, used to be transported over to Long Beach, which allowed some nice waves to come through despite the breakwater. Having more sand in the area made a significant difference during south swells, which allowed for a healthy surfing community to be maintained. This is practice of relocating sand no longer done today, and the ocean floor is now too deep to harbor the waves in did in the 1960s. In the event that the removal of the breakwaters never becomes feasible, this could be a potential option for decent surf to return to Long Beach.

City Grade

Information regarding surfing and other topics associated with the Long Beach Breakwater was relatively easy to access. Our interviewees, Mayor Bob Foster, Sean Collins of Surfline, and Ed Hendricks from the Long Beach chapter of the Surfrider Foundation were willing to speak with both of us on our topic and were quite helpful. The information regarding the Long Beach Breakwater was open to public use, and past meetings regarding the breakwater posted online along with power points that were easily accessible. As far as our research report is concerned, the city of Long Beach and its citizens receive an A.
References Cited


Foster, Bob. Personal interview. 20 Nov. 2009.

