Sand at the harbor mouth. Dredging removes sediment from the harbor and the jetty along with dredging. Dredging is on the west by the San Lorenzo River, which brings sand to the sandy shoreline, created through longshore transport, bordered by Twin Lakes Beach.

The harbor mouth of the Twin Lakes Beach in Santa Cruz, California is a description how the longshore transport and the jetty between the two beaches, will impact the profiles of the beaches. The Twin Lakes Beach is an example how the overall dredging project in the harbor between the beaches impacts the beaches as a whole.

Our graphs show that dredging is essential in providing sand to nourish Twin Lakes Beach. Dredging increases the width of Twin Lakes Beach because sediment from the harbor is replaced back onto the beach. This is important because Twin Lakes Beach is longer than sand and is much smaller than Seabright Beach, because of the blocking of longshore transport by the assistance.

Meters

Kelli Van Wandel
Rachel Bickert
San Lorenzo Valley
High School

Santa Cruz County Precipitation Totals

Acknowledgements

Kelli and Rachel’s Excellent Beach Adventure

The Sequel: Sand, Storms, and Sapiens

Introduction

Hypothesis

We hypothesized that the harbor jetty will block longshore transport and Seabright Beach, thus starving the Twin Lakes Beach on sand. If longshore transport there is no sand to the harbor, it will counteract some of the sand starvation by adding sand to Twin Lakes Beach.

Materials

- Brass 2X hand level
- Red level
- 4 inches wide level
- Steel ruler
- L-shape level
- T-square
- 1½ meter level
- Compass
- Nails
- Tape

Procedure

1. Record time in GMT, wind speed and direction, weather conditions, temperature, and record high and low tide in lab book at Seabright Beach in Santa Cruz, CA, then at Twin Lakes Beach in Santa Cruz, CA.
2. Find the eye level of the person using the brass 2X hand level.
3. Mark their eye level on the double red with a pencil at roof level.
4. The person using the level will be sitting at their eye level on your feet in first vertical bar on right side.
5. Level with brass and read level of red level of two meters away, measured with the triple red.
6. The person using the brass 2X hand level looks through it, if there are any eyes or superiors on your roof level, the reading is negative. If their current eye level below their original mark, the reading is positive.
7. Continue down the beach in a straight line, using landmarks.
8. Measure sand in inches each three weeks.
10. Conclusion data and put into graph.

Results

Our graph shows that dredging is essential in providing sand to nourish Twin Lakes Beach. Dredging increases the width of Twin Lakes Beach because sediment from the harbor is replaced back onto the beach. This is important because Twin Lakes Beach is longer than sand and is much smaller than Seabright Beach, because of the blocking of longshore transport by the assistance.

Conclusion

Dredging the Seabright Beach is essential. It dredging were to stop, there would be negative impacts on so many things. Twin Lakes Beach would become much smaller than its current 150 meters across. On the other hand, Seabright Beach would increase in width, because sand and sediment would build up in the harbor mouth. This would negatively impact the property and businesses around the jetty and into the harbor, decreasing the size of the harbor and Seabright Beach.

The harbor would cease to exist. Seabright Beach would be built up in the mud and eventually throughout the harbor, creating a deep. Transportation. This would ultimately result in Twin Lakes Beach losing all sand and roadway is raised. The houses on Twin Lakes Beach would lose their pristine value. Beachgoers would have to essentially be destroyed by shore erosion. Also, the economy of Santa Cruz is tied directly to the harbor, providing jobs. Transportation. This would ultimately result in Twin Lakes Beach losing all sand and roadway.

Sand accumulation at our starting point of Seabright Beach is as follows: control section because it doesn’t move.

Twin Lakes Beach before and during dredging

Seabright Beach

Twin Lakes Beach

Seabright/Twin Lakes Comparison: October 25, 2009

Seabright Winter 2009-2010

Twin Lakes Beach 2009-2010

Seabright 2008-2009