



Observations on Morphological Changes Impact of the February 27, 2010 Tsunami along of VI-VII Regions

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Introduction

On February 27, 2010, 06:34 UTC (03:34 local time) a Mw 8.8 earthquake hit central Chile causing widespread damage but only few fatalities despite of its high magnitude. The epicenter was located offshore Maule but the rupture zone extended over nearly 500km long and 200km wide (Figure 2)[1]. This massive rupture triggered devastating tsunami waves that affected more than 600km of the Chilean coastline during several hours after the shock.

An international tsunami survey plan was initiated few days after the event, with scientists from the United States, Greece, Germany, and Chile, coordinated by UNESCO –ITIC. The present work focus on describing some morphological changes produced by the earthquake and the tsunami that followed on the Chilean coastline.



The protective role of sand dunes

At several places, such as Punta de Lobos (VI Region), sand dunes stabilized by vegetation prevented a direct hit of the tsunami offering an effective protection (Figure 6)

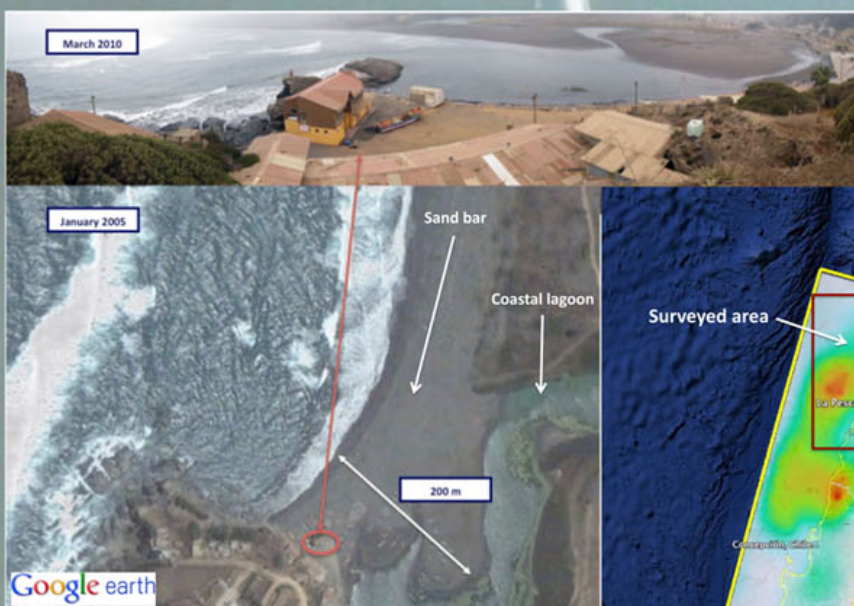


Figure 1 : The sand bar that formerly enclosed the Estero Nilahue disappeared under the effect of the tsunami

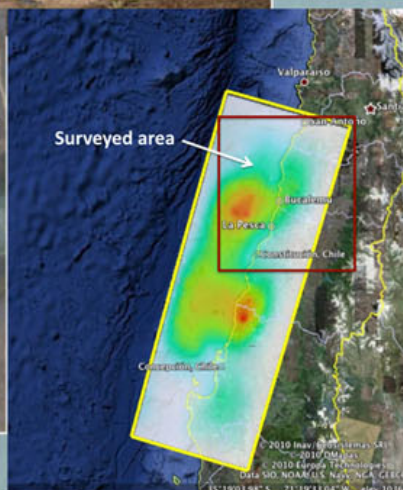


Figure 2 : Surveyed area and Finite Fault Model from the National Earthquake Information Center (NEIC-USGS) [1]

Examples of the the Coastal Morph

• Mataquito River Mouth (V)
 At the river mouth, located a current interaction pattern is oriented to the north. The river is parallel to the coastline over source to the sand spit is mo river itself but also to the Ma height was 2-3m height, with 9-10km long before the arriv The spit was totally washed combined effect of the earth (sediment transport). Thus, under water (Figures 4 and 5

Characteristic Features of the Central- South Chile Coastal Morphology

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