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A rising trend: Scientists discover wave heights are increasing on the Pacific Ocean

FORT MYERS, FL – Beach erosion, caused in large part by unusually severe storms, has damaged beaches and property in recent years along the Pacific coast of the United States.

Suspecting the cause was related to wave heights, scientists' research discovered that wave heights have been increasing on the Pacific Ocean for nearly 30 years, based on data from buoys positioned by the National Oceanic and Atmospheric Administration's National Data Buoy Center (NDBC).

Winter waves have increased from an average of 9 feet in the mid-1970s to approximately 14 feet in the last 10 years. The coastline's 100-year storm waves grew from 32 feet in the early 1900s to approximately 50 feet in 2001.

Although the greatest increase has occurred off the Washington coast, scientists have found similar but smaller increases off the Oregon and northern California shorelines. Researchers found no significant increase off the coast of southern-central California or the Gulf of Alaska.

"The reasons for the increase in wave height are a little unclear, but are likely related to El Niño and La Niña climate patterns," says Jonathan Allan, Ph.D., coastal geomorphologist for the Oregon Department of Geology & Mineral Industries. "What we know for sure is larger waves are having a direct impact on the shoreline in terms of increased erosion-related problems."

In addition to increased wave heights, an increase in the frequency of severe storms is also affecting the Pacific coast. During the 1998-1999 La Niña winter, four storms produced wave heights exceeding the projection for a 100-year extreme event -- projections that have since been revised.

"Storm frequency affecting the Pacific coast has increased 65 percent over the last 50 years," Allan said. "In December 2007, a storm off the coast of Oregon caused wave heights to exceed 33 feet, the previous estimate of the 100-year storm wave, for over 18 hours – that is a very long time to have such high wave heights."

Increasing wave heights and more frequent severe storms crashing down on the beaches in Oregon, Washington and Northern California means increased sand erosion and a danger to ecosystems, properties and infrastructure located along the coast.

“This research will allow coastal planners and managers to better plan for the future,” Allan said, “specifically how far back we should construct buildings along the shoreline.”

For more information, visit www.asbpa.org.

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ABOUT ASBPA: Founded in 1926, the American Shore and Beach Preservation Association (ASBPA) represents the scientific, technical and political interests along the coast in an effort to shape national research and policy concerning shore and beach management and restoration. ASBPA strives to engage in a factual debate on coastal issues and economics that will foster sound, far-sighted and economical development and preservation of our beaches; thereby aiding in placing their beliefs within the reach of the largest possible number of people in accordance with the ideals of a democratic nation. For additional information about ASBPA, visit www.asbpa.org.

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