

UC SANTA BARBARA

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## **El Nino Muddies Santa Barbara Channel**

If a picture is worth a thousand words, then recent satellite images of the water in the Santa Barbara Channel speak volumes about the impact of El Niño 1998 on the ecology of the channel, according to scientists at The University of California, Santa Barbara and the Channel Islands National Marine Sanctuary.

Since early February, storms generated by El Niño have inundated two-thirds of the Santa Barbara Channel with fresh water, terrestrial sediments, agricultural runoff and other debris, said scientists who analyze the color and content of the channel's water.

"We are astonished by the magnitude of runoff into the channel," said Leal Mertes, assistant professor of geography at UCSB. The numerical data from the images will be available in early spring, but scientists already know that there is a huge amount of runoff because they can see it in satellite images--as well as in photographs taken from a research vessel and airplane.

"These research findings, combined with comparable runoff data of the 1982-83 El Niño, will enable us to better study potential impacts of current storm runoff in the ocean, such as possible changes in light conditions for subsurface plants and animals, the spread of terrestrial sediments, and possibly pollution caused by man," said Mertes.

The runoff creates visible, nutrient-rich brown sediment plumes which, in turn, produce green marine algal blooms. The research is part of an on-going UCSB study known as Plumes and Blooms: Studying the Color of the Santa Barbara Channel. The research program provides valuable ocean color data for ocean scientists and coastal zone managers to better understand and manage the complex marine environment found in the Santa Barbara Channel. Satellite images are compared with those collected by ship and aircraft.

The satellite images are collected by SeaWiFS, a color imaging sensor built by Raytheon, Santa Barbara Remote Sensing. The sensor collects full global images of the Earth's oceans every 48 hours. SeaWiFS data indicate the levels of phytoplankton and chlorophyll in the ocean, surface currents and atmospheric aerosols above the water.

The Channel Islands National Marine Sanctuary encompasses 1,252 square nautical miles of near shore and ocean habitats surrounding San Miguel, Santa Rosa, Santa Cruz, Anacapa and Santa Barbara islands, extending from mean high tide to six nautical miles offshore each of the islands. The National Oceanic and Atmospheric Administration designated the sanctuary in 1980 to protect and manage marine, cultural and historical resources of national and global significance.

Editors: For color copies of the satellite images please call (805) 893-2191.

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