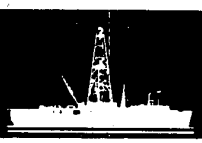
NEWS RELEASE
Ocean Drilling Program



Karen Riedel
Ocean Drilling Program
Texas A&M University
College Station, TX 77840
(409) 845-9322

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ODP Leg 138: Eastern Equatorial Pacific

Sediments from equatorial Pacific give scientist climate information

COLLEGE STATION, Texas -- Scientists for the Ocean Drilling Program returned from a two-month cruise dedicated to learning more about how Earth and its oceans respond to climate fluctuations through time.

Scientists on board the Texas A&M University-operated drill ship *JOIDES Resolution* scrutinized more than three miles of sediment retrieved beneath the seafloor for subtle changes in color, density and magnetics. Variations in sediments reflect changes in global and regional climates. By matching the thousands of wiggly lines in the sediment produced by climate systems, scientists were able to piece together a 10-million-year history of climate change.

The scientists targeted 11 sites surrounding the Galapagos islands in the eastern equatorial Pacific. Extensive sunlight in this region combines with nurient-rich waters to spawn as much as 50 percent of the ocean's biologic productivity. Billions of microscopic plants and animals, making up the beginning of the food chain, play a critical role in the global balance of carbon dioxide. When these plants and animals die, their skeletons sink and form sediments that blanket the deep-sea floor. Changes in

Scientists on the expedition also learned that

■ brief periods of extremely high productivity, called biological "blooms," occurred in the region. The causes of these blooms and their relationship to climate change and global carbon dioxide budgets call for extensive study.

■ ocean currents responded to changes in the position of continental land masses. In the geologic past the tropical Atlantic and Pacific freely exchanged water through the region now blocked by the Isthmus of Panama. When tectonic forces closed this pattern of circulation, regional climate also slowly changed. Scientists can apply the workings of ancient climate systems to more rapid changes. Furthermore, the data collected afford some of the only tests available for the sophisticated computer models of present-day climates. Scientists will compare the models with the geologic record to better understand the present climate and predict future trends.

Dr. Lawrence A. Mayer of Dalhousie University, Halifax, Nova Scotia, Canada, and Dr. Nicklas G. Pisias, Oregon State University, Corvallis, were chief scientists. Dr. Thomas R. Janecek, Texas A&M University, College Station, was staff representative.

The 30 scientists, representing 10 of the program's 20 countries, drilled in 4,000 meters of water to recover a record-breaking 5,537 meters of core. This two-month cruise was the 38th for the six-year program. Its port-call in San Diego was the first time the ship had been to the continental United States

until March 1992," said Dr. Philip D. Rabinowitz, director. Our upcoming cruise investigates the hydrothermal systems of the Juan de Fuca Ridge."

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Note: JOIDES Institutions are: University of California at San Diego; Columbia University; University of Hawaii; University of Miami; Oregon State University; University of Rhode Island; Texas A&M University; University of Texas at Austin; University of Washington; and Woods Hole Oceanographic Institution.

Canada and Australia Consortium for the ODP, European Science Foundation Consortium for the ODP: Belgium, Denmark, Finland, Iceland, Italy, Greece, the Netherlands, Norway, Spain, Sweden, Switzerland and Turkey; Federal Republic of Germany; France; Japan; the United Kingdom and the U.S.S.R.)

The scientific party for Leg 138 were: Lawrence A. Mayer, co-chief scientist, Dalhousie University, Halifax, Nova Scotia, Canada; Nicklas G. Pisias, co-chief scientist, Oregon State University, Corvallis; Thomas R. Janecek, staff scientist, Ocean Drilling Program, Texas A&M University, College Station; Jack G. Baldauf, Ocean Drilling Program, Texas A&M University; Steven Bloomer, Dalhousie University, Halifax, Nova Scotia; Kathleen A. Dadey, Hawaii Institute of Geophysics, Honolulu; Kay-Christian Emeis, Universität Kiel, Federal Republic of Germany; John Farrell, Brown University, Providence, R.I.; José-Abel Flores, Universidad de Salamanca, Spain; Eric M. Galimov, U.S.S.R. Academy of Sciences, Moscow; Teresa King Hagelberg, Oregon State University of Michigan, Ann Arbor; Masao Iwai, Institute of Geology and Paleontology, Tohoku University, Japan; Alan E.S.Kemp, The University of Southampton, United Kingdom; Dae Choul Kim, Hawaii Institute of Geophysics; Gary Klinkhammer, Oregon State University; Margaret Leinen, University of Rhode Island, Kingston; Shaul Levi, Oregon State University; Mikhail A. Levitan, U.S.S.R. Academy of Sciences, Moscow; Mitchell W. Lyle, Lamont-Doherty Geological Observatory, Palisades, N.Y.; Angus K. Mackillop, Technical University of Nova Scotia,Canada; Laure M. Meynadier, Université Pierre et Marie Curie, Paris, France; Alan C. Mix, Oregon State University; Ted C. Moore Jr., University of Michigan, Ann Arbor; Isabella Raffi, Centro II Servizio Geologico Nazionale, Rome, Italy; Christina Ravelo, Princeton University, N.J.; David Schneider, Lamont-Doherty Geological Observatory; Nicholas J. Shackleton, University of Cambridge, United Kingdom; Jean-Pierre Valet, Université Pierre et Marie Curie; Edith Vincent, Université Pierre et Marie Curie.