



NOAA Report

May 14, 1990

COMING UP

Space Environmental Laboratory Users' Conference in Boulder, Colo., May 15-17.

Boise Interagency Fire Center 25th anniversary celebration in Boise, Idaho, May 18-19.

Marine Fisheries Advisory Committee meetings in Washington, D.C., May 22-23.

Annual NOAA Fish Fry in Washington, D.C., June 6.

Dr. Manabe Becomes Member of NAS:--Dr. Syukuro Manabe, of NOAA's Geophysical Fluid Dynamics Laboratory in Princeton, N.J., recently was elected a member of the National Academy of Sciences. Dr. Manabe was a pioneer developer of the mathematical modeling of Earth's climate over 25 years ago, and his work still dominates the world's climate modeling efforts, according to Alan R. Thomas, acting Assistant Administrator for Oceanic and Atmospheric Research. This prestigious award is of special significance to NOAA, Thomas said, because it recertifies NOAA's leadership in climate modeling as currently recognized by the International Panel on Climate Change. Moreover, this leadership provides an internationally recognized cornerstone for NOAA's evolving Climate and Global Change Program.

They're Back! Pesky Sea Lions Return To Seattle:--Three of the six male California sea lions that were moved to San Miguel Island, Calif., in late March have returned to Puget Sound, the Marine Fisheries Service reports. The sea lions were moved in an attempt to discourage their habit of hanging around the fish ladder at Seattle's government locks to feast on upstream-bound steelheads. The first animal to return was detected by radio on May 3 off Alki Point, West Seattle. This animal completed the more than 1,000 mile journey in 30 days. NMFS continues to monitor the location and movements of these persistent animals.

Alvin Researchers Report Finds In Gulf:--A NOAA-backed team has discovered communities of what may be new species of giant chemosynthetic tubeworms and mussels on the sea floor 200 miles east of Galveston, Texas. The university scientists also discovered an

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undersea river of super-salty water feeding a massive pool of brine 215 miles southwest of New Orleans, La.

The discoveries were made April 1-13 from the research submersible *Alvin* by scientists from Texas A&M University, Louisiana State University, and the University of California at Santa Barbara, funded by NOAA's National Undersea Research Program through its National Undersea Research Center at the University of North Carolina at Wilmington.

The NOAA-backed studies will help scientists understand better the potential impact of any future oil and gas development on the northern Gulf's ecosystem in waters deeper than 3,300 feet, the current depth limit for oil and gas drilling in the Gulf.

The tubeworms and mussels are growing on fast-forming rock outcroppings near hydrocarbon seep sites at a depth of 9,000 feet in the Alaminos Canyon area.

The super-salty underwater river flows into a 20,000-acre brine pool at depths of 6,400-7,700 feet in the Orca Basin on the Louisiana Continental Slope.

Chief scientist Dr. James Brooks of Texas A&M's Geochemical and Environmental Research Group said, "Our dives confirm that there are prolific cases of tubeworms and mussels at oil and gas seep sites in deep waters of the Gulf of Mexico and that hydrocarbon and salt seeps profoundly impact the geology, chemistry, and animal life of the deep Gulf. We are now analyzing what appear to be major differences between the seep communities we discovered in Alaminos Canyon and those found earlier in shallower water on the continental slope."

The tube worms, some nearly 5-feet long and over an inch in diameter, and the nearly foot-long mussels appear to be new species and are the largest yet found in the Gulf. These communities and others like them found by National Science Foundation-backed researchers on the Florida Escarpment on an earlier leg of the expedition are the first found in Gulf waters deeper than 3,200 feet. They are similar to and only slightly smaller than the world's largest tube worms found around hydrothermal vents near the Galapagos Islands in the eastern Pacific Ocean.

Preliminary analyses indicate that symbiotic bacteria in the gills of the Alaminos Canyon mussels break down hydrogen sulfide as an energy source, as do the hydrothermal vent mussels in the Pacific. Other mussels found at seep sites in shallower areas of the Gulf derive their nourishment from methane.

The tube worm and mussel communities are growing on or near carbonate rock outcroppings forming relatively rapidly in geologic time--possibly over tens to hundreds of years rather than tens of thousands of years. The outcroppings are being produced from the buildup of massive volumes of calcium and magnesium carbonates as a byproduct of microbes in the sediment digesting the seeping hydrocarbons. These "false reefs," which were found wherever there

were seeps, appear to be "growing" so rapidly that they are enveloping the mussels and the bases of the tube worms anchored to them.

The discovery of the super salty subsea river flowing into the Orca Basin brine pool confirms the hypothesis that the pool, which is seven times saltier than sea water, was formed by brine flowing from further up the slope, fed by salt dissolving from an exposed salt dome on the continental slope.

Alvin, which can carry a pilot and two scientists to depths of 13,000 feet, is the world's most active deep diving research submersible, with over 2,200 dives over the past 26 years. Alvin and Atlantis II, its support ship, are operated by the Woods Hole Oceanographic Institution for the U.S. Navy, the National Science Foundation, and NOAA.

Maryland Company Fined After NOAA Investigation:--An investigation by NOAA Fisheries Service enforcement agents, in cooperation with other federal and state agencies, resulted in a fine of \$7,500 for the Rock Hall Clam and Oyster Company, Inc. of Rock Hall, Md.

Company president Gilbert E. Hinefelt entered a guilty plea in the U.S. District Court for New Hampshire. The felony information charged Rock Hall with a violation of the Lacey Act. The Lacey Act is designed to prohibit the illegal trade of fish or wildlife under false labeling.

Rock Hall had previously been placed on the state embargo list by the New Hampshire Department of Health and Human Services for shipping contaminated shellfish to New Hampshire. Any company on a state embargo list is prohibited from conducting specified commercial trade in that state. The charges stated that the Rock Hall Company had falsified labels, accounts and records in order to continue doing business in New Hampshire despite being on that state's embargo list.

The company was placed on the New Hampshire embargo list from August 9, 1988, to January 4, 1990, for shipping shellfish contaminated with fecal coliform, a bacteria harmful to humans. From November 15, 1988, to December 17, 1988, the Rock Hall Company used the names of companies not on the state embargo list to avoid seizure and condemnation of its shellfish by New Hampshire.

Dr. Ferguson Heads New NOAA Laboratory:--Dr. Eldon E. Ferguson has been named director of the new Climate Monitoring and Diagnostics Laboratory in Boulder, Colo. The facility maintains and analyzes long-term measurements of concentrations of greenhouse gases at NOAA baseline stations at Mauna Loa, Hawaii; American Samoa; Barrow, Alaska; and South Pole, and keeps and analyzes global climate data sets. Ferguson was director of NOAA's Aeronomy Laboratory from 1966 to 1986 when he became director of research at the University of Paris-South, in Orsay, France. He returned to NOAA in January.

NOAA To Join International Space Year Group:--NOAA will be elected a full member of the Space Agency Forum on International Space Year (SAFISY) at an international meeting in Kyoto, Japan, on May 17. The

International Space Year is a worldwide event celebrating the 500th anniversary of Columbus' voyage to the New World. SAFISY activities are focusing on contributions to environmental and global change problems through space activities. NOAA is contributing projects concerning deforestation, greenhouse effect detection, sea surface temperature, polar ice extent, the ozone hole, productivity of oceans, a global change encyclopedia, and other satellite education and training programs.

NOAA Assists With Pacific Disaster Map:--Several NOAA elements contributed to a recently issued natural hazards map of the Circum-Pacific printed by the U.S. Geological Survey. The map shows a composite of natural disaster phenomena including typhoons, tornadoes, extreme waves, sea ice (including superstructure icing), tsunamis, earthquakes, and volcanic and other tectonic elements. Accompanying the map is a booklet containing detailed data and discussions of the various natural disasters and their potential impacts on the region. The map is one in a series of contributions to the International Decade for Natural Disaster Reduction. Future maps in the series will address physical, chemical, biological, and oceanographic information within various geological parameters. Contributing to the map's production were the National Ocean Service, Office of Oceanic and Atmospheric Research, and the National Environmental Satellite, Data, and Information Service.

NOAA To Assist Around-the-World Balloon Flight:--Deputy Under Secretary Gray Castle joined NASA Administrator Richard Truly at a press conference May 9 in Washington, D.C., to announce plans for "Earthwinds", a pioneering around-the-world balloon flight scheduled for November. The balloon will have an American, Soviet, and British crew. The Weather Service will provide around-the-clock flight path weather advisories and NESDIS will provide a COSPAS-SARSAT search-and-rescue satellite beacon.

Institute for Fisheries Oceanography Formed:--NOAA, the University of North Carolina, and Duke University have joined forces to establish the NOAA Cooperative Institute for Fisheries Oceanography. The institute was created to coordinate existing research and training programs for graduate and undergraduate studies among the three participating institutions. It will serve as the center from which scientists and engineers can focus on fisheries and oceanographic problems in the coastal waters of the South Atlantic Bight (Cape Hatteras to Cape Canaveral). The institute also will identify environmental issues confronting the coastal waters along the southeast coast. Dr. John D. Costlow, marine biologist and past director of Duke University's Marine Laboratory in Beaufort, N.C., is the institute's first director. Dr. Bradford E. Brown, NOAA's Acting Director of the Southeast Fisheries Center, is the Chairman of the institute's Executive Board.

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