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2010 Annual Report: Letter from Susan K. Avery, President and Director

To know the value of our mission to understand the world ocean, we need only review a partial list of natural events in 2010.

January brought a 7.0 magnitude earthquake in Haiti that took 230,000 lives. It resulted from movement along a slip fault running along the seafloor at both ends of the island and lengthwise through its middle.

February saw a magnitude 8.8 earthquake caused by release of friction between oceanic and continental tectonic plates just offshore of Chile.

In March, a volcanic eruption in Iceland effectively paralyzed air travel in Europe and caused hundreds of flight cancellations worldwide. That volcano is part of a global mid-ocean mountain chain, 50,000 miles long and 99% unexplored. Among the few facts we know is that most of its towering tips can only be touched by diving below 8,000 feet.

Then, beginning in April, the Deepwater Horizon oil well blowout in the Gulf of Mexico gave us the worst environmental catastrophe in U.S. history. It will take years of research to fully understand the extent of ecosystem impacts, both at sea and ashore.

Throughout these events, WHOI researchers shared knowledge with frontline responders. Soon after the Haiti earthquake, senior scientist Jian Lin advised the Jamaican government about the island's vulnerability to the same fault line that destroyed Port au Prince. WHOI scientists Chris German, Tim Shank, and Dana Yoerger were working off the coast of Chile at the time of that country's magnitude 8.8 earthquake, and redirected their cruise to gather valuable data at the seafloor fault site.

And many WHOI scientists and engineers played a key role in our nation's response to the oil spill in the Gulf. Using WHOI funds, they travelled quickly to Baton Rouge and provided immediate assistance to BP, the Coast Guard, and the National Oceanic and Atmospheric Administration (NOAA). Several of them soon provided Congressional testimony, but carefully avoided undue publicity in the overheated media environment in order to preserve scientific credibility. That quiet determination to remain objective enabled them to get closer to the blowout site than any other researchers. It was our scientists, with cooperation from BP and assistance from the Coast Guard, who were able to collect fluid samples directly from the damaged wellhead, using specialized WHOI sampling techniques and tools.

We also assisted Air France, deploying two REMUS vehicles owned by the Waitt Institute for Discovery to search a vast area of the southern Atlantic for the black box of the flight that went down in 2009. That search will continue in 2011 in the hope of solving a vexing aviation mystery and bringing closure to the many families still grieving.

WHOI President and Director Susan Avery

Enlarge Image

WHOI President and Director Susan Avery introduces the *Alvin* public event. (Photo by Tom Kleindinst, Woods Hole Oceanographic Institution)

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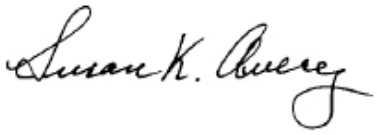
This renowned ability to work in the deep ocean is central to WHOI's contributions to oceanography and society. With proficiency extending from inland estuaries to the deepest abyssal regions of the planet, our eagerness to know everything between carries us ever forward in the optimism of discovery.

Emblematic of that ability and spirit is the human-occupied submersible, *Alvin*, which ended the year with the final dives in its current incarnation. Appropriately, its last mission was in the Gulf of Mexico, carrying scientists to deep sea corals to examine potential effects of the oil spill. *Alvin* is now home in Woods Hole, beginning its transformation to a 6,500-meter vehicle capable of exploring more of the ocean than ever before.

The new vehicle will be one more tool WHOI researchers use to not only respond in times of emergency, but anticipate and lead in new directions. 2010 may have been a long and difficult year, with slow economic recovery and that tragic sequence of natural catastrophes, but how wonderfully hopeful it is that we can look forward to decades more of discovery and new knowledge each time *Alvin* rises to the surface from a voyage to inner space!



The Oceans and Us

Understanding the Secret World
Beneath the Sea

Presentation by Susan Avery at TEDxBoston in the summer of 2010.

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