



# NOAA's Undersea Research Center for Hawai'i & the Western Pacific Hawai'i Undersea Research Laboratory (HURL)



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HURL provides cutting edge deep submergence capability around the main Hawaiian Islands, Northwestern Hawaiian Islands (NWHI) and U.S flag Pacific Islands. It operates two deep diving (6562 ft) submersibles, *Pisces IV* and *V*; a 225-ft support vessel, *R/V Ka'imikai-o-Kanaloa*; a remotely operated vehicle, *RCV-150*; a multi-beam mapping system; and the largest annotated video archive (~7,000 hrs) in the Pacific. Research focus is on extreme ecosystems, coral habitats, volcanic systems and fisheries.



## Highlights



- Analyzed the genome of new bacteria from Lō'ihi seamount for pharmaceutical and industrial enzyme potential; many unusual life forms on the seamount survive extreme levels of temperature and pressure
- March to August 2005, led a diving expedition involving four countries and 12 universities and research institutes, to investigate the Kermadec volcanic arc north of New Zealand and seamounts near Samoa; these giant undersea volcanoes have unique ecosystems, spew out large amounts of greenhouse gases and form the very active eastern margin of the tectonic plate that generated the Dec. 26, 2004 tsunami. This is the first comprehensive submersible expedition to this volcanic arc.



- Identified at least 17 new species of deep sea corals in the NWHI, documented the major genetic diversity of deep water corals compared to shallow corals, proved they are key habitats for many fish and other animals including endangered monk seals
- August 2002, discovered the Japanese Midget submarine which led the Dec 7, 1941 attack on Pearl Harbor and was later sunk by the USS Ward
- March, 2005, located the wreck of the I-401, world's largest diesel electric submarine, capable of launching three aircraft
- Investigating the tsunami and landslide potential during the growth of Lō'ihi Seamount, which is the next Hawaiian Island



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