

# Funding cut imperils undersea lab off Florida Keys

July 20 2012, by JENNIFER KAY

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(AP) — Ocean explorer Sylvia Earle sported one Rolex dive watch on each wrist as she slipped beneath the balmy waters of the Florida Keys for a weeklong stay at an undersea research lab where marine biologists have kept constant watch on a coral reef.

In 1970, Rolex gave Earle a small gold watch when she led the first team of women "aquanauts" to a lab off the U.S. Virgin Islands. Back then, prolonged underwater exploration was still something of a novelty.

She got a larger black dive watch not long before arriving in Key Largo last week for what could be the last mission for her and other scientists to the Aquarius Reef Base.

It seems that time has almost run out for the lab in the [Florida Keys](#) National Marine Sanctuary. The mission ending Saturday could be the last at the last publically funded lab of its kind, because the Obama administration has cut Aquarius' \$3 million annual funding.

The National Oceanic and Atmospheric Administration owns the lab that has rested for two decades some 60 feet below the water's surface. The federal budget cuts threaten to close the lab unless it can secure private funding.

"At the very time the ocean needs all the help it can get, it really is a travesty," said Earle, former chief scientist at NOAA and currently explorer-in-residence at National Geographic. She's staying at Aquarius

for the third time.

Aquarius is a pressurized lab whose residents are called "aquanauts." Air, hot running water, electricity and high-speed communications lines snake down from a life support buoy to those confined to the 43-foot (140-million feet)-long metal tube. Food, computers and supplies are delivered in water-tight drums.

Scientists and support staff who scuba dive to the lab reside in a 400-square-foot (122-million meter) chamber that includes a kitchen and bunks six. From video streamed live from the lab this week, it looks like Earle and five other scientists, filmmakers and staff are living in a mobile home encrusted with coral.

The base lets researchers scuba dive up to nine continuous hours a day on the reef, seeing marine life transition from day to night. No breaks are needed to return to the surface, and no decompressing. Scientists say they accomplish in a week what might take months to do in shorter dives from a boat.

Mark Patterson, a marine science professor at the Virginia Institute of Marine Science at the College of William and Mary, is at Aquarius for the eighth time — for research involving corals, sponges, plankton and goliath grouper.

He also builds underwater robots, but said adamantly that scientists must spend time underwater. This week, he's brought electrode-tipped instruments to measure corals.

"A robot could never do this in a million years, even though I love robots to death," Patterson said.

Without Aquarius, in future experiments he'll have to transfer corals in

limited dives from a boat to a lab on land.

"I'll have to do my science in a very different way," Patterson said.

Year-round research for two decades at Aquarius has allowed scientists to compile a continuous stream of data from one reef in a region where the fragile ocean ecosystems have rapidly declined. Scientists largely blame climate change and man-made stresses for the change.

"The trend is not good. The good news is, we know why," Earle said in a video chat Tuesday from Aquarius, as fish glided past the window behind her.

Advanced diving techniques pioneered 50 years ago by explorers such as Ed Link and Jacques Cousteau allowed people to stay underwater for days or weeks at a time. These techniques also have been adapted for offshore drilling operations, and one lab has been turned into an undersea hotel off Key Largo. But Aquarius appears to be the only underwater research station left.

Since 2001, NASA also has trained astronauts to live and work in space at Aquarius, including a mission in June that simulated a visit to an asteroid.

Marc Reagan, director of last month's NASA training mission at Aquarius, said the watery environment is akin to a low earth orbit. He's optimistic other funding will come through to keep Aquarius running and that NASA will continue to train astronauts there.

"It would be a shame to see it go away," he said.

U.S. Rep. Ileana Ros-Lehtinen, R-Fla., said budget cutbacks were unavoidable despite congressional efforts to find the funding.

Government officials have left the door open for private funding to continue research there.

"Unfortunately, our budget environment is very, very challenging and we are unable to do all that we would like," NOAA spokesman David Miller said, calling Aquarius vital. "We hope that additional sources of funding can be found."

Social media and outreach for the independent Aquarius Foundation — established to raise the money to run the [lab](#) — is as much a focus of this week's mission as recording more data from the reef. Filmmaker Greg MacGillivray's One World One Ocean campaign is documenting the mission and posting live updates online.

"What we're hoping is that people will care about this national treasure and also (see) how useful it is to manage the coral reefs in the United States," Patterson said from Aquarius.

"To lose a stewardship tool and a research tool is ..." he paused briefly, and Earle finished his sentence for him: "Stupid."

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