Life on the Decks of Sunken Ships

Corals, fish, worms, algae, and sponges have settled on the sunken hulls of WWII Valor in the Pacific National Monument

Over 70 years ago the U.S.S. Arizona and the U.S.S. Utah were attacked and sunk in Pearl Harbor, Hawaii, taking the lives of hundreds of men with them.

Nature invariably finds a way to overcome even the most egregious of human follies. Today, over 45 species of marine organisms live and flourish on the hulls of the two ships, according to a survey conducted by scientists at the Hawaii Institute of Marine Biology.

Comparing the results of this 2011 study led by Dr. Steve Coles from the Hawaii Biological Survey of the Bishop Museum in Honolulu, HI with those of a similar study in 1986, suggests that substantial changes in the ocean life on both ships have occurred in the last 35 years.

Twenty-one species of fish were identified on the U.S.S. Arizona and 18 species on the U.S.S. Utah in 2010. The fishes on both vessels were dominated by two species of surgeonfish (*Acanthurids)*, and by the sergeant major (*A. abdominalis)*. Although similar numbers of fish species were found around the U.S.S. Arizona in 2010 as in the 1986 survey (25 species), only eight species were found in common between the two studies.

This finding suggests that the composition of the fish community has changed substantially.

Where surfaces of both ships are not covered by silt or rubble, they support a rich assemblage of organisms dominated by sponges and worms. The *Branchiomma sp.* tubeworm was the most abundant organism reported on the U.S.S. Arizona in the 1986 survey, but it appeared to be less abundant in 2011. This finding suggests that lower organic particulate levels in Pearl Harbor water have diminished the food source for this organism that relies on suspension feeding.

The most significant finding of this study was the establishment of an apparently thriving community of hard corals on both vessels. They are dominated by *Pocillopora damicornis* and *Leptastrea purpurea*, and include a few large colonies of *Porites compressa* and *Porites lobata*.

Over 635 total corals were counted and measured on the U.S.S. Arizona and 60 corals on the U.S.S. Utah, most of them occurring on deck areas but also along the ships' sides. Interestingly, no corals were reported on the U.S.S. Arizona in the 1986 survey or elsewhere in a comprehensive survey of Pearl Harbor conducted from 1971-73. It is likely that this recent coral growth is a positive response to the improved water quality and clarity that has been achieved in Pearl Harbor in the last 30 years.

At the present rates of coral accumulation it is possible that large sections of the U.S.S. Arizona and the U.S.S. Utah may become encased in coral. This may require a decision of whether to allow coral accumulation to progress, or to selectively remove coral to maintain the structural integrity of these historic ships.

–Corbett Nash, NPS

Look for the full report soon at irma.nps.gov.

Note: Pacific Coral Reef Program provided partial funding to support this inventory when the program was administered by the PACN.