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**NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION**  
UNITED STATES DEPARTMENT OF COMMERCE



Contact: Jim Milbury/  
562-980-4006

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## **NOAA Researchers See Dramatic Decline of Endangered White Abalone in Waters Off Southern California**

Scientists from NOAA's National Marine Fisheries Service report a significant decline of endangered white abalone off the coast of Southern California in the journal *Biological Conservation*.

"Since 2002, we have been surveying white abalone off San Diego using an underwater remotely operated vehicle (ROV)," said Kevin Stierhoff, research fisheries biologist at NOAA's Southwest Fisheries Science Center in La Jolla, and lead author of the journal article. "In the absence of fishing, we hoped to see the population stabilize or increase. However, our latest assessment using data collected in 2008 and 2010 indicates that the white abalone population has continued to decline by approximately 78 percent over the last ten years."

These results confirm predictions made by scientists in 2001 suggesting that wild populations had dwindled to levels that were too low to support successful reproduction, and that as animals died of natural causes, a new generation would not emerge to replace them. White abalone are "broadcast spawners," projecting eggs and sperm into the water column at the same time for fertilization. If there is not a suitable partner close by, it is unlikely any offspring will be produced.

"Unfortunately we have continued to see white abalone grow larger, older and further apart with no evidence of significant numbers of offspring for the last ten years," said John Butler, a research biologist at NOAA's Southwest Fisheries Science Center and co-author of the article. "While it could be the juveniles are hiding or too difficult to see, it is more likely that the species is just failing to reproduce."

Scientists see a serious need to enhance populations of white abalone by out-planting individuals into the wild using a captive breeding program. Currently, University of California Davis Bodega Bay Marine Laboratory oversees a number of white abalone breeding facilities in California through a special permit from NOAA to work with the endangered species.

"We are at a point where a successful breeding program is critical to the survival of the species," said Melissa Neuman, recovery coordinator for white abalone and co-author of the journal article. "At this point, without human intervention, the species could go extinct within our lifetimes."

In 2001, white abalone became the first marine invertebrate listed under the Endangered Species Act. The marine mollusk was once abundant off the coasts of Baja and Southern California, where it thrived in waters from 15 to 200 feet deep, making it the deepest dwelling abalone species in California.

For a short time, white abalone supported a commercial fishery in North America. During a ten-year period from 1969 to 1978, an estimated harvest of over 350,000 adults was landed. By the mid-1980's, landings fell to near zero, and the commercial fishery was closed in 1997.

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On the web: Biological Conservation journal 152 (2012) 46 – 52  
<http://www.elsevier.com/wps/locate/biocon>