MORTALITY IN MEXICAN ABALONE POPULATIONS DUE TO HYPOXIC CONDITIONS

Ricardo Searcy-Bernal. Ensenada, Baja California, México. March 16, 2011

During the 2000´s abalone populations and commercial catches of *Haliotis fulgens* and *H. corrugata* in Mexico were steadily increasing until 2008; however, severe mortalities have been detected in recent years, associated to hypoxic conditions that also affected other benthic invertebrates such as sea urchins.

Since 2007 unusual abalone mortalities, that did not still impact production, had been reported by some divers; but in 2009 several abalone populations in the central part of the Baja California peninsula suffered losses that, according to the Federation of Fishing Cooperatives, had an impact on commercial catches. Lower mortalities were also detected in 2010.

Preliminary data suggested that dissolved oxygen in coastal waters was very low during these mortality episodes, and this was confirmed in 2010 with oxygen and pH sensors installed on the sea bottom at Isla Natividad by Comunidad y Biodiversidad (COBI), a non-governmental organization, and the local fishing cooperative, Buzos y Pescadores, recording oxygen levels as low as 3.5 ppm and pH values as low as 7.8 at a depth of 20 m (see report in Spanish: http://www.cobi.org.mx/descargas/proyecto-natividad-2010.pdf).

Anomalous hypoxic events have also been documented along the Pacific coast of the United States and are considered an expansion of hypoxic deep waters towards the continental shelf, caused by upwelling systems stronger than usual. According to researchers of the University of Baja California, in the case of Central Baja the intrusion of subtropical water masses may also be partially responsible for these low oxygen and pH conditions.

Unfortunately, hypoxia and acidification of coastal waters is an issue of growing concern in many parts of the world, and we would like to know whether impacts on natural populations, fisheries and/or culture of abalone (or other species) have been recently observed elsewhere. Currently, Mexican research institutions are joining efforts to study this problem and to provide management options to cope with this new environmental situation, so we would appreciate any international input.

Please contact Dr. Ricardo Searcy-Bernal, rsearcy@gmail.com .

FURTHER READING…

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