

Miyoko Sakashita

From: Tim Wootton [twoodton@uchicago.edu]
Sent: Wednesday, January 14, 2009 11:40 AM
To: Miyoko Sakashita
Subject: [Fwd: Ocean Acidification and affect on larval oysters]

----- Original Message -----

From: - Wed Nov 26 10:16:21 2008
X-Mozilla-Status: 0001
X-Mozilla-Status2: 00000000
Return-Path: <SueCudd@aol.com>
Received: from junk02.uchicago.edu (junk02.uchicago.edu [128.135.12.120]) by m4500-01.uchicago.edu (MOS 3.8.7a) with ESMTP id BPF72203; Wed, 26 Nov 2008 10:15:37 -0600 (CST)
Received: from localhost (localhost [127.0.0.1]) by junk02.uchicago.edu (MOS 3.8.7a) id BBE09966; Wed, 26 Nov 2008 10:15:20 -0600 (CST)
Received: from mx02.uchicago.edu (mx02.uchicago.edu [128.135.12.249]) by junk02.uchicago.edu (MOS 3.8.7a) with ESMTP id BBE09964; Wed, 26 Nov 2008 10:15:20 -0600 (CST)
Received: from imo-m24.mx.aol.com (imo-m24.mx.aol.com [64.12.137.5]) by mx02.uchicago.edu (MOS 3.8.7a) with ESMTP id CWT93661; Wed, 26 Nov 2008 10:15:36 -0600 (CST)
Received: from SueCudd@aol.com by imo-m24.mx.aol.com (mail_out_v39.1.) id x.c92.3b4bb8f4 (37576) for <twoodton@uchicago.edu>; Wed, 26 Nov 2008 11:05:10 -0500 (EST)
Received: from [192.168.1.110] ([209.237.77.84]) by cia-mb05.mx.aol.com (v121_r4.6) with ESMTP id MAILCIAMB051-92c8492d73b4e4; Wed, 26 Nov 2008 11:05:10 -0500
Message-Id: <7876E852-E2D3-4032-AF8E-AD70BA5C8481@aol.com>
From: Sue Cudd <suecudd@aol.com>
To: twoodton@uchicago.edu
Content-Type: text/plain; charset=US-ASCII; format=flowed; delpsp=yes
Content-Transfer-Encoding: 7bit
Mime-Version: 1.0 (Apple Message framework v928.1)
Subject: Ocean Acidification and affect on larval oysters
Date: Wed, 26 Nov 2008 08:05:09 -0800
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Hi Dr. Wootton,

I own a shellfish hatchery on the Oregon Coast and for the past 18 months have had a lot of trouble producing oyster larvae (after 30 years of successful operation.) This has also happened at Hatfield Marine Science Center and Taylor Shellfish in Washington. This has had a devastating affect on the oyster industry as we are one of the primary suppliers of oyster larvae to the industry. The other interesting thing (this would all be very fascinating if my business was not in big trouble) is that both here and at Hatfield there is no fouling on our intakes. Normally we would be cleaning off large barnacle sets routinely. The only thing we have to clean off now are sea grasses (Zostera sp.) We are working with OSU Oceanography. They say that the overall pH of the ocean here is down .2 but we are seeing as our normal pH now 7.8-7.9 with lows down to 7.4 during upwelling events. DEQ has given us some historical data for the bay that show the normal pH between

8.1 and 8.3 inside the bay with occasional drops to 7.8 during upwelling.

What we have seen in the hatchery is slow or no growth with eventual attrition of the larvae. A small percentage reach setting size. We have tried some buffering which seems to help but not enough for commercial production.

Early stages of shellfish larvae require amorphous calcium carbonate and aragonite for development so may be very susceptible to acidification. I agree that this acidification problem has progressed at a rate we could not even imagine a few years ago.

Sue Cudd
Whiskey Creek Shellfish Hatchery

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