

From: Thomson, Richard <thomsonr@dfo.mpo.com>
Sent: Monday, May 3, 2010 10:57 AM
To: Beamish, Richard <Richard.Beamish@dfo-mpo.gc.ca>
Subject: RE: Sockeye report

Dick... I am working up the Strait of Georgia winds for you. I think they were very weak in 2007 in spring... but at the very least we need to look at wind components not just strength. Strong winds normally deepen the mixed layer depth (by mechanical energy) which is where Curry and Roy and Gargett got their inspiration. In the Strait of Georgia, I think (but not sure) Paul was talking about the thin surface brackish layer which can inhibit productivity like a cap unless broken down by the wind. Here is the Curry and Roy reference.

Your fan

Rick

Curry, P. and C. Roy, 1989: Optimal environmental window and pelagic fish recruitment success in upwelling areas. *Can. J. Fish. Aquatic Sci.*, **46**, 670-680.

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

From: Beamish, Richard
Sent: Monday, May 03, 2010 10:14 AM
To: Thomson, Richard
Subject: RE: Sockeye report

yes I am glad I included you which is why I included you. My point with the winds is that very strong winds will keep breaking down the mixing layer. A decade ago I was part of a study out of UBC with Paul Harrison's group that showed that strong winds did this. However, your mixing layer depth calculation is the key observation.
thanks for your help
Dick

Dick Beamish
NOTE new email: Richard.Beamish@dfo-mpo.gc.ca
Fisheries & Oceans Canada
Pacific Biological Station, Nanaimo BC, CANADA
250-756-7029 (phone) 250-756-7053 (fax)
http://www.pac.dfo-mpo.gc.ca/sci/pbs/beamish_e.htm

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

From: Thomson, Richard
Sent: Saturday, May 01, 2010 3:50 PM
To: Beamish, Richard
Subject: RE: Sockeye report

Hey Dick:

Just going over your massive work on the Strait of Georgia sockeye demise. What a

massive amount of work and data!!

I like your attempt to bring in the winds but I think your interpretation it is not correct. It didn't make sense to me that 2007 would have such a thin MLD and STRONG winds! That is impossible, irrespective of the river runoff. And Gargett (1997) doesn't apply to estuarine coastal waters ... Ann devised her work for the offshore region where she is probably right. So I went into work today and dug out the winds for EC Met Buoy 46146 in the Strait and I was right! The winds are nearly zero in May of 2007 and moderately to the NW in April and June 2007 (they had to be to keep the Fraser discharge from flushing out of the system to the south). So, the reason we seeing such a shallow MLD in 2007 is because the runoff was very high and the winds almost non existent. There was no entrainment into the shallow MLD which would also have greatly reduced light levels in May (and likely April and June) where the plankton were trying to grow. No nutrients, little light = no food. I will also try and get the phytoplankton data for the period just to confirm.

I am editing the text using Track Changes and will try and get my comments to you by next week.

Aren't you glad you included me in the report!??

All the best

Rick

From: Beamish, Richard
Sent: Fri 4/30/2010 2:57 PM
To: Thomson, Richard
Subject: FW: Sockeye report

Here it is big boy. Please go over your section and do whatever you want with it.
Have a good weekend
Dick

Dick Beamish
NOTE new email: Richard.Beamish@dfo-mpo.gc.ca
Fisheries & Oceans Canada
Pacific Biological Station, Nanaimo BC, CANADA
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http://www.pac.dfo-mpo.gc.ca/sci/pbs/beamish_e.htm