Notice to Connecticut Shellfish Commissions
From: Tim Visel, The Sound School

Observations of Sulfide Toxicity – Winter Kill

Our cold winters have taken a toll on our Blue Crab populations, perhaps even some pockets of terrapins and a couple of reports of dead eels.

The shallow natural oyster beds may have also had a winter kill (not so much by direct ice) from sulfides. When sulfide is present oysters refuse to open and if in sufficient quantity and long duration oysters simple run out of stored food and starve. A winter kill historically has been recorded as "stools deaths", shells still paired but containing rancid meats. The East River area between Madison and Guilford had reports in the 1880s of such kills, but such winter kill can occur along the coast in areas of sulfide enrichment. These areas of organic distribution often have sulfur odors described as "match stick" or rotten eggs.

If your shellfish commission has seen any shellfish winter kills (not by direct ice) this year (also blue crabs terrapins) I would appreciate a quick report by email at tim.visel@new-haven.k12.ct.us

This is a copy of a report that went out recently to our blue crab list.
Thank you,
Tim Visel

The Search for Megalops

Special Notice # 1 – Blue Crab Winter Kill
- Habitat Transition Now Apparent –

Blue Crab Research in Long Island Sound
You do not need to be a Scientist to report!

(IMEP Habitat History Newsletters can be found indexed by date on the BlueCrab.Info™ website: Fishing, eeling and oystering thread) and CtFishtalk.com™-Salt Water Reports and the http://bluecrabblog.blogspot.com/

Tim Visel, The Sound School

June 15, 2015

Blue Crab Winter Kill

This spring has been somewhat discouraging for blue crabbers along the Atlantic Coast – first as an indication that a large amount of our over wintering blue crabs have perished and second a weak showing in the 2014 Megalops set. First winter kill reports from the Chesapeake Bay report as much as 30% have died but along our coast 60% or

more from early reports. The long cold winter is now suspected to have allowed sulfide levels to rise especially under ice – to those lethal to Blue Crabs (and perhaps over wintering Terrapins as well). Winter kills of fish, oysters, blue crabs and turtles are not new but indications of rapid habitat change. Fish trapped in deep holes under ice can be killed from sulfide – the byproduct of organic matter digestion, coastal salt ponds appear to be the most vulnerable (and unfortunately one of the few habitat refuges for blue crabs) in our area. For example the Black Hall River in Old Lyme is now suspected if a sulfide fish kill last February (2014) when ice formed and about 1,000 striped bass were killed. Conversations with area blue crabbers mentioned previous winter fish kills of stripers– not as large but accompanied by the smell of sulfur. The most susceptible winter kill areas are small coves and bays with long "weak" connections to the Sound – frequently described as "poorly flushed." Such areas tend to collect the deepest organic deposits – when in high heat these areas undergo ammonia/sulfide generation.

In the scientific literature such deposits are mentioned as "fine muds – low oxygen sulfuric oozes" but many fishers call it Black Mayonnaise (Sapropel). A cold winter with many powerful storms – turns over this marine compost much like a huge shovel releasing tremendous amounts of nutrients for spring algal blooms. Areas that once held deep soft deposits of organic matter undergoing sulfate digestion (sulfur reducing bacteria) can release a sulfuric acid wash with a dramatic pH drop – increasing toxic impacts. These kills are more frequently associated with black waters following storm events. In time coastal storms over a period of years may transition sulfuric oozes (black in our area from iron) to sandy shelly brown mixtures with some mud but loose and not sticky. It is these "recultivated" marine soils that can sustain heavy sets of shellfish such as the Long Island Sound and Narragansett Bay great Quahog sets in the 1950s and 1960s (cooler period more storms).

Habitat Transition -

A recent shell hash seagull survey (June 1) at the Niantic River state launching ramp (parking lot) yielded about 30% of dropped shells were in fact bay scallops (sea gulls don't waste their time dropping empty shells to crack so this is a quick way of determining locally what's around) and 60% were quahogs – the rest mussel, oysters and soft clam. Around January 20th bay scallops moved into the lower reaches of eastern CT Rivers. This is another indication of a major habitat transition – the return of bay scallops to Connecticut. Habitat transitions are usually marked by sudden climate and energy shifts and the increased occurrences of multi species winter die offs.

Habitat transitions in the historical literature are not quick they in the past took decades and a return of warm winters and few storms would help the blue crabs – last winter obviously did not.

Any reports of Blue Crabs (dead or alive) would be a help – all observations are important.

Thanks for your continued interest – tim.visel@new-haven.k12.ct.us