New England Estuarine Research Society

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NEERS NEWS

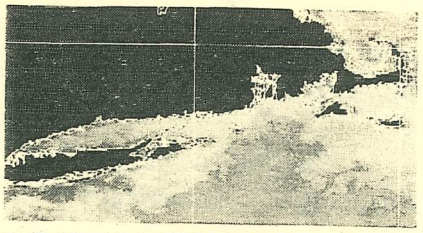


Figure 4. Chlorophyll concentrations from SeaWIFS on 6 October 1997 (Highest to lowest concentration: red > yellow > green > blue).

Notes from the Long Island Research Component of the Fall NEERS meeting held on the Avery Point Campus of the University of Connecticut

On October 24-26, 2002, at the Avery Point Campus of the University of Connecticut the New England Estuarine Research Society (NEERS) met jointly with the Sixth Biennial Long Island Sound Research Conference (LISRC). The LIRSC was established as a biennial conference to provide a venue for formal and informal dialogue focusing on research activities related to the Sound and its watershed.

Bob Wilson opened the Thursday morning session with a discussion of transient water column structure in Long Island Sound. He described variations over the last 55 years in water column temperatures, salinities and dissolved oxygen values. All of these showed an abrupt change in 1998, which was an extremely dry year. He concluded that the time of onset of stratification and the time of water column turnover were variable, and that hypoxia seems most related to this stratification cycle.

Dan Codiga followed with a discussion of shorter term variations in water column characteristics and concluded that both temperature and salinity contribute to stratification, but can fluctuate independently of each other. Further, wind event tend to homogenize the water column for short periods and the spring/neap tidal cycle does not appear to influence stratification.

Irina Abramson presented evidence from the paleo-record of foraminifer in Long Island Sound sediments that anthropogenic influences on coastal ecosystems have been increasing. Eutrophication became apparent in the early-mid 1800's by serious changes occurring of the last few decades.

Johan Varekamp presented results from examining oxygen and carbon isotopes in foram tests in Long Island Sound sediment cores. He concluded that salinity, the amount of carbon and the amount of oxygenation in the waters of LIS were relatively constant from about 1000 AD to the 1800s. Since then, these parameters have been much more variable and there appears to be a relationship between low salinity, excess carbon and low DO.

Paul Stacey then described the regulatory efforts (Total Maximum Daily Load or TMDL) to manage nutrients (nitrogen) in the Sound, which are part of the Long Island Sound Management Plan. The Plan requires a 58.5% reduction in nitrogen loadings by 2014. Paul concluded that although BMPs and "Smart Growth techniques could slow the increases in nitrogen loads, pollution prevention of point sources appeared to hold the best prospects for meeting the LIS nitrogen reduction goals.

John Mullaney presented work the USGS has done to estimate non-point nitrogen loadings to LIS from the entire watershed by looking at river flows and nitrogen concentrations in the rivers. He presented a color coded map of Connecticut with the estimated loadings, which, not surprisingly, were highest in metropolitan areas and lowest in rural, forested towns.

Carmella Cuomo concluded the morning session with a description of bottom water (within 2 cm of the bottom sediments) and sediment conditions in Western Long Island Sound. With sediment image profiles, water and sediment samples, Carmella found that DO levels in the sediments appear to be decoupled from the water immediately above the sediments. When the conditions are right, sulfides can be released from the sediments when the DO in the water is actually fairly high. This may cause additional stress on benthic animals, such as lobsters, just as they are trying to recover from an hypoxic event.

Summary of the morning: The severity and extent of eutrophication and hypoxic events in Long Island Sound are influenced by water column stratification/turnover and the quantity of nutrients entering the Sound. Eutrophication and hypoxia are relatively recent events in Long Island Sound (since colonization/industrialization). There is a lot of nitrogen getting into the Sound from both point and non-point sources. Nutrients and hypoxia are generally higher in the west and lower in the east. The best way of reducing nitrogen loadings appears to be by reducing the input from wastewater treatment facilities.

After lunch, Chris Tomichek summarized 25 years of finfish monitoring data from Eastern Long Island Sound near the Millstone Power Station. She reported that there has been a shift in the dominant species with winter flounder and anchovies decreasing and menhaden and summer flounder increasing. She reported that others in the region have reported similar shifts that may be due to generally warming water temperatures.

Joe Crivello then reported on some genetic work he has done with winter

Message from your President

Letter from the Ex-President
Fall 2002

The Fall Meeting at the University of Connecticut (Avery Point) was a grand success. The Thursday Symposium provided an in depth look at on Long Island Sound and brought together scientists with many common interests. The new marine science building provided a spectacular view of the sun set and was the perfect venue for the mixers and the Saturday session. I thank Pat Kremer for not only suggesting the joint meeting with the Long Island Sound group, but for also being the local program organizer and Program Chair for the meeting. It is rare that one person does so many jobs for a meeting and Pat did it with grace and competence all while on a blue-water science cruise.

I continue to be impressed by the student presentations. We had the largest participation ever by student members in both the oral and poster sessions and stiff competition for all the Student Prizes. The science was thoughtful and well done, while the presentations set the standard against which the seasoned 'non-student' presentations are judged. At this meeting the membership voted to establish a new undergraduate poster award and named the award in honor of Dr. Scott Warren (Connecticut College).

This meeting also provided an opportunity for members to comment on the proposed Constitution changes and the new Operations Manual. The documents have been greatly improved by these comments and we will vote on the newly revised Constitution at the spring meeting.

My turn as President has ended in a mad rush. NEERS is the best group of people with whom I have ever had the pleasure of dancing and discussing science and I was honored to have been elected President. I would like to thank Robert Buchsbaum and Nancy O'Conner for serving as Members-at-Large and Ron Rozas (Web page) and Larry Spencer (Newsletter) for keeping NEERS lines of communications open. Alan Young (Historian) has done a great job of supplementing the aging leadership memories with the facts of how things really happened. At this meeting I turned the Presidency over to Marshall Pregnall, who will lead NEERS boldly into the 21st Century. Congratulations are due to Pam Arnofsky –Neubert (President-elect) and Cindy Delpappa (Secretary) who both won hotly contested races for office. Dave Burdick ran unopposed for Treasurer and won in a landslide. Pat Kremer has announced her retirement as Program Chair and Hilary Neckles is the new Program Chair-in-training.

I look forward to seeing you all at the Spring meeting to be held at the University of Massachusetts, Dartmouth in early May.

Regards,
Linda

Miscellaneous notes from the business meeting

David announced our financial goals. There were: don't go broke, put $5 of every regular membership into the endowment to pay for awards from interest income. Typically, $1800 are given out as awards. Income is roughly $5550, costs are $4750 so there is about $1000 gain that has been put towards increasing the interest to pay for the awards. David mentioned the idea of a dues increase. The last time that occurred was during the tenure of David Franz in 1994.

Message from the editor

You had better treasure this issue of the newsletter, as you won't be seeing another issue until the Fall-Winter of 2003. I'm off to New Zealand and Australia for a sabbatical leave and won't arrive back in the states until August of 2003. What everyone says about God-zone (New Zealand), I may never return. Rest assure the society will be in the good hands of President Pregnall and President-elect Pam Arnosfsky. Since David would let Pam have another go at being Treasurer, she took the next open office.

This issue mostly deal with NEERS and ERF issues. If some of you feel the itch to write an article while I'm away, please do so. I particularly like one of you to take good notes at the Spring meeting. I will incorporate those into our next Fall-Winter newsletter.

Cheers,

Larry

Notes from the wonderful world of ERF Meetings as transcribed by the editor from a report by our new President and resident ERF expert, Marshal Pregnall

During the business meeting at the most recent NEERS meeting, Marshall Pregnall reported on his whirl-wind trip to Seattle where he had just attended the ERF board meeting.

Estuaries—The time between submission and acceptance of an article now averages about 85 days. The editor and the board are working on providing the membership with electronic access to the journal. The board would also like to see more international papers printed in the journal.

The Seattle Meeting—As noted on the address page of the newsletter, the next ERF meeting will be held in Seatle from the 14th to the 18th of September at the Washington State Convention Center. Marshall noted that as home to the Starbucks Corporation, Seattle abounds in coffee shops and there will be plenty in the vicinity of the Convention Center for that special mid-morning Café Latte. There will be many special topic sessions, both invited and contributed. The planners are expect about 1200 people. There will be a special social at the Chilikat Village with planked salmon and other goodies associated with the Pacific Northwest. There will be both hotel and dorm rooms available for the attendees. Registration is a wee bit expensive, $350, but it rains all the time in Seattle, so they are use to a lot of green stuff. Deadline date for abstracts is 3-3-3. For all of you not into numerology, that date is the 3rd of March 2003.

Future Meetings—The 2005 meeting will be held in Norfolk, Virginia sometime in the fall. The 2007 meeting will come to Providence, RI, sometime in November. The ERF board was so impressed with the quality meeting that our NEERSIAN colleagues organized the last time, that they decided to not ping, but pong directly to Providence.

Constitutional Changes—These are necessitated by the addition of two more affiliates, Gulf of St. Lawrence and California. I always knew that southern California was splitting off from the continent, I didn't think it would happen so soon.

Other miscellany—The board has hired, will be hiring, or is thinking of hiring a management team, Science Management for ERF (guess I was sort of dozing off as Marshall reached this point). The board is also looking into a e-newsletter.

Michael Schwartz wins first NEERS poster trivia contest.

In order to add some excitement to the poster session at UCONN in October, NEERS poster promoter Ed Rhodes put together a poster trivia contest. Contestants had to correctly answer 5 questions based on information contained on the posters.

Mike's winning entry was drawn from a slew of entries. Mike is a student from Naugatuck Valley Community Technical College in Connecticut, and was caught saying upon notification of his win, "That is pretty neat, I had forgotten that I had even put in an entry, I can't believe I won." For his superb effort, Mike won a years' NEERS student dues and $25 in cash donated by Aquatecnics, LLC.

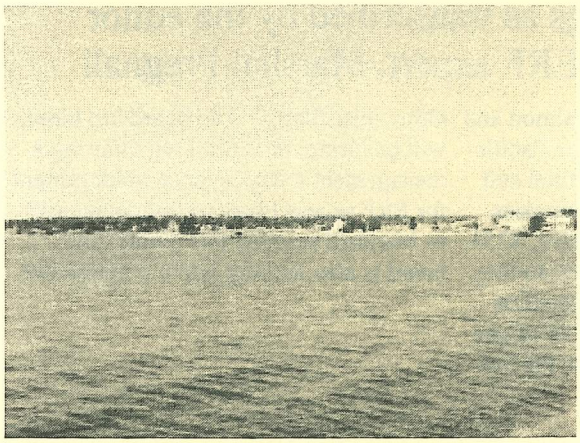
Ed has volunteered to put on version 2 of this contest for our spring meeting. Look for it! You can't win if you don't play.

Submitted by Ed Rhodes

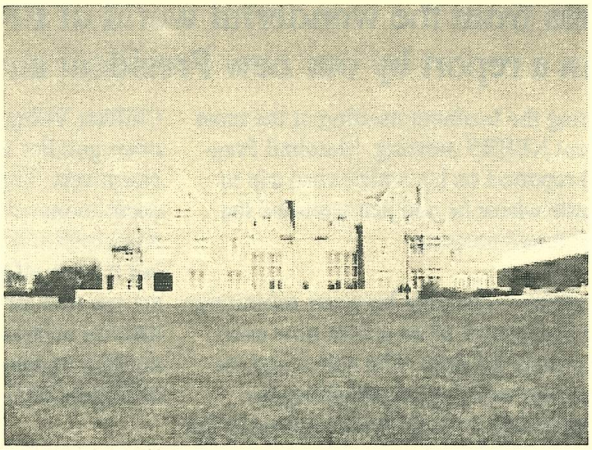
Editor's note:

Don't forget that this is a two way street. If you don't submit a poster, then Ed can't have a contest. It looks like the new trend in poster presentation is using a large flat bed plotter to print the poster. If you win the prize, you will be $25 closer to purchasing a plotter so you can win one of NEERS new undergraduate poster prizes. Get those push-pins ready for the next poster presentation and buy that Palm Pilot for note taking as you view the posters. Mike won't be caught unaware this go around.

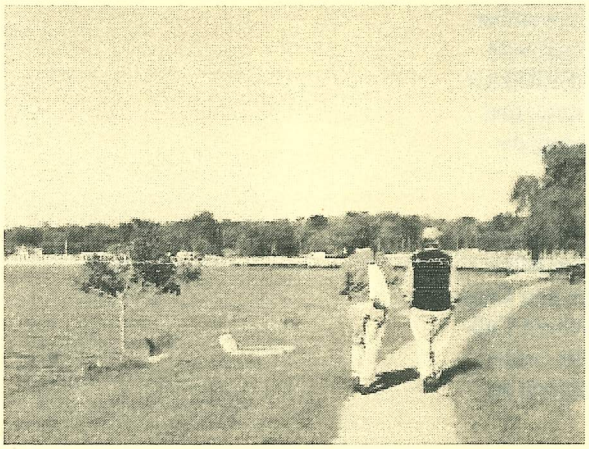
Some Avery Point Photos



View from Avery Point

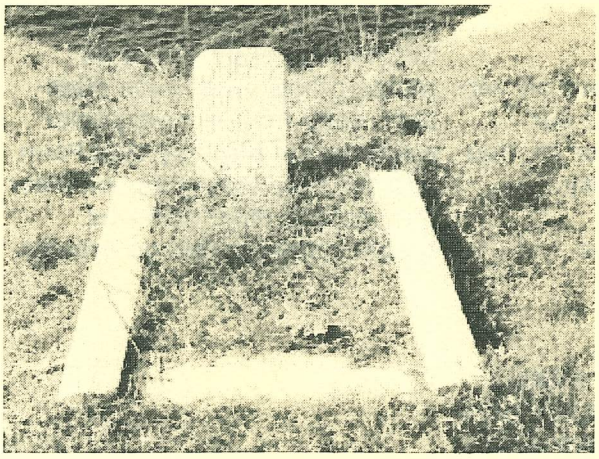


Just a small bungalow for a private party



Working off the lunches

Hilary thinking



Is this where NEERS presidents go?

New Pres-elect giving us the cold shoulder

Notes from the Long Island Research Component—continued

flounder in ELIS. The purpose of the study was to determine the source of winter flounder entrained through the Millstone Power Station. The genetic variation was characterized through the use of microsatellite loci. He found that there are discernable genetic differences between populations that are geographically very close; these differences are stable over time and the technique can be used to determine the sources of larvae and juveniles. Calculations of the numbers of Niantic River larvae entrained based on this technique were very similar to estimates based n a mass balance technique.

The next topic dealt with the composition of macrofaunal communities in intertidal beaches in ELIS. Joe Vozarik reported that, based on 12 years of data collected from three sites near the Millstone Power Station, these infaunal communities are relatively stable over time, but affected by the amount of exposure and organic matter content. Overall, the numbers of species and densities were highest in the sheltered area with high organic matter. Also, the assemblages at the most protected site included higher numbers of oligochaetes and polychaetes, while exposed communities were dominated by rhynocoels and polychaetes.

Juliana Borucinska described how the health status of sharks could be evaluated using hisopathological examination of micronuclei in red blood cells. She found sharks captured in Long Island Sound had higher frequency of micronuclei than those captured in coastal Massachusetts water, suggesting that LIS sharks were less healthy.

Amy Ferland presented information on harbor seals in the area of Norwalk Harbor, Connecticut. In 1972, seals became protected by the Marine Mammal Act. Since then, their numbers have grown to over 3,000 in LIS. The Marine Aquarium at Norwalk conducted surveys of potential haul-out sites and weather-related hauling-out patterns from 1996 to 2002. Results indicate that harbor seals are selective –only 2 of 16 possible sites were used. They also observed the effect of human activity and conclude that seals were disturbed when humans were as far away as 160 m – farther than the 50 m recommended by NOAA. Harbor seals may have abandoned haul-outs near Norwalk Harbor due to increased boat traffic.

Don Cahoon described the Sediment Elevation Table, or SET, a newly developed technology for measuring the elevation of the surface of a tidal marsh; the sediment elevation is a critical characteristic of wetlands. Nels Barrett put the SET to work on Barr Island and made a plea to get a network of these set up throughout Long Island Sound to accurately document the losses of wetlands from sea level rise, sediment starvation or other causes. Johan Varenkamp used his trusty forams in cores from salt marshes in LIS to estimate relative sea level rise (RSLR). He found that marshes at both Great Island in the Connecticut River and Knells Island in the Housatonic River grew and accreted faster than sea level rose. He could also see evidence of fresh water spikes, which he attributed to the hurricanes in 1938 and 1955. Shimon Anisfeld closed the mini-salt marsh session with a description of the wetland loss in the Quinnipiac River tidal marshes. Analysis of aerial photos revealed a 36% increase in mudflat from 1974 – 2000 in one area of the marshes. Data were collected on sediment dynamics at sites corresponding to different vegetative regimes (Phragmites, Typha, none). Generally, once the vegetation is gone the marsh experiences a rapid loss of elevation.

The afternoon session closed with two presentations on phytoplankton. Senjie Lin described an effort to study species diversity and population dynamics of phytoplankton along the western-eastern nutrient gradient of Long Island Sound. The study will identify those phytoplankton larger than 10 microns and conduct molecular analysis of phytoplankton smaller than 10 microns. They will look for Pfisteria and other harmful algae and conduct physiological and growth studies. Kevin Strychar presented some preliminary results from studies on phytoplankton dynamics using flow cytometry. The technique allows the researcher to quickly distinguish not only different cells but alos nutrient limitations from light limitations at the cellular level. The technique also allows the diversity of rare communities to be described.

Submitted by Linda Birely

With many thanks to Linda Birely for her work in composing the preceding article. Why can't the rest of you be more like a Linda?

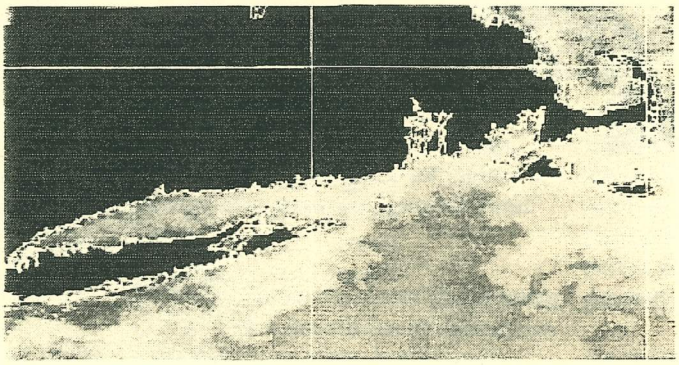


Figure 4. Chlorophyll concentrations from SeaWiFS on 6 October 1997 (highest to lowest concentration: red > yellow > green > blue).

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WWW.NEERS.ORG

All the news that fits, we print!!

ERF Biennial Meeting In Seattle

The 17th Biennial Internal Conference on estuarine research will be held in Seattle, Washington, 14 to 18 September, 2003. The meeting is entitled, "Estuaries on the Edge: Convergence of Ocean, Land and Culture.".

Go to the following location for more details on the meeting.

Http://fish.washington.edu/news/erf/

NEERS Spring Meeting

The next NEERS meeting will be held sometime in late April or the first couple of weeks of May someplace in the vicinity of New Bedford, Massachusetts. The meeting will be sponsored by the folks at UMASS/Dartmouth. Start getting your papers ready. If this meeting is as popular as the one at Avery Point, you will need to mail your abstract extremely early. Pat Kremmer claims they were standing nine deep at her door when the abstract submittance date arrived. New Bedford has lots of things to see or do (the whaling museum, samples of the bay with lots of heavy metals, that wonderful artificial reef that protects the inner harbor, and who knows, there may even be some microbreweries that have great bands for dancing. For all you Mac Entourage users, mark your calendar now. For PC users, put a sticky on your computer monitor. That's more efficient than waiting for Windows to function properly.