

**Atlantic Estuarine
Research Society
&
Southeastern Estuarine
Research Society**



Spring Meeting
“Global change and its effects from rivers to the sea”
March 15-17, 2007

*North Carolina Aquarium at Pine Knoll Shores
Pine Knoll Shores, North Carolina*



**ATLANTIC ESTUARINE RESEARCH SOCIETY
&
SOUTHEASTERN ESTUARINE RESEARCH
SOCIETY**

**Spring Meeting
March 15-17, 2007
North Carolina Aquarium
Pine Knoll Shores, NC**

Welcome to the Atlantic Estuarine Research Society & Southeastern Estuarine Research Society Spring 2007 meeting!

The featured session titled “**Global change and its effects from rivers to the sea**” will be held Friday morning. The session will feature presentations by a panel of prominent estuarine scientists, managers, and others, followed by an open forum discussion. Oral presentations will take place Friday morning, Friday afternoon and Saturday morning. The poster presentations will occur Friday at the **North Carolina Aquarium**, followed by a dinner banquet at **Duke Marine Lab**, in nearby Beaufort, NC.

Student Awards will be presented before the close of the meeting on Saturday. Winners will receive a one-year membership to the Estuarine Research Federation.

Thanks to **Bob Christian, Chris Voss, and Terry West** for an outstanding job serving as our local coordinators and organizing the panel discussion for this Spring meeting. Additional thanks go out to AERS webmaster **Pat McGrath** for managing the AERS website and for facilitating the electronic submission of abstracts and registration forms. Thanks to AERS Treasurer **Treda Smith** for managing the registration payments.

We hope that you have a fun-filled and intellectually stimulating meeting,

Rachael Blake and David Gillett,
AERS Program Co-Chairs

AERS/SEERS Spring 2007 – Schedule of Events
The North Carolina Aquarium
Pine Knoll Shores, North Carolina

All events held at North Carolina Aquarium unless noted

Thursday March 15, 2007

5:30 - 7:00 AERS Board Meeting - AmeriSuites
5:00 - 8:00 Registration, Opening Social,
Poster session - CMAST

Friday March 16, 2007

7:30 Poster set-up, Registration
8:00 Welcome/ Opening Remarks
David Yozzo, AERS President
Marie DeLorenzo, SEERS President
8:20 - 10:00 Panel Presentations on Climate change
10:00 - 10:20 Break
10:20 - 11:00 Keynote Address
Dr. Robert Howarth, Cornell University
11:00 - 11:30 Discussion
11:30 - 12:00 Submitted Presentations
12:00 - 1:30 Poster session, Lunch
1:30 - 3:00 Submitted Presentations
3:00 - 3:30 Break
3:30 - 5:00 Submitted Presentations
5:00 - 6:30 Poster session
6:30 - 7:00 AERS & SEERS Business Meetings – DML
7:00 - 10:00 Happy Hour and Oyster Roast Banquet at Duke
Marine Lab (DML)

Saturday March 17, 2007

8:00 - 8:15 Opening remarks
8:15 - 9:45 Submitted Presentations
9:45 - 10:15 Break
10:15 - 11:30 Submitted Presentations
11:30 - 12:00 Student Awards and Closing Remarks
Dave Yozzo, AERS President
Marie DeLorenzo, SEERS President
1:00 Field Trip to Rachel Carson Reserve

Global Change and its Effects From Rivers to the Sea
March 16, 2007

- 7:30am **Poster set-up**
- 8:00 **Welcome & Opening Remarks**
- 8:20 – 10:00 **Panel Presentations**
- 8:20 PAST AND FUTURE APES: THE GEOLOGIC AND HISTORIC EVOLUTION ON THE OUTER BANKS AND ALBEMARLE PAMLICO ESTUARINE SYSTEM AND POTENTIAL IMPACTS OF PROJECTED CLIMATE CHANGE. David Mallinson – Dept. of Geological Sciences, Eastern Carolina University.
- 8:40 ECOLOGICAL RESPONSES OF THE PAMLICO SOUND SYSTEM TO A PERIOD OF ELEVATED HURRICANE ACTIVITY: MID 1990s UNTIL ??. Hans Paerl – Institute of Marine Sciences, University of North Carolina at Chapel Hill.
- 9:00 GLOBAL CHANGE AND ITS IMPACT ON COASTAL POLLUTION AND LIVING RESOURCES. Mike Mallin – Center for Marine Science, University of North Carolina Wilmington.
- 9:20 DYNAMICS OF TIDAL SWAMPS IN THE CAPE FEAR RIVER BASIN. Lynn Leonard – University of North Carolina Wilmington.
- 9:40 INTERACTING EFFECTS OF HUMANS AND NATURE: FLOODWATERS, FISHERMEN, AND POPULATION DECLINE IN THE BLUE CRAB. David B. Eggleston - Department of Marine, Earth & Atmospheric Sciences, North Carolina State University.
- 10:20 – 11:00 **Keynote Address**
CLIMATE CHANGE AND COASTAL EUTROPHICATION: THE INFLUENCES OF FRESHWATER DISCHARGE ON NITROGEN DELIVERY FROM THE WATERSHED AND ON ESTUARINE SENSITIVITY. Dr. Robert W. Howarth – David R. Atkinson Professor of Ecology and Environmental Biology, Cornell University.
- 11:00 – 11:30 **Panel Discussion and Open Forum**
- 11:30 ASSESSING CLIMATE CHANGE IN THE CHESAPEAKE BAY USING CONTINUOUS AUTOMATED MONITORING, WATER QUALITY MAPPING, AND REMOTE SENSING TECHNOLOGIES. Hall*, M.R., T.M. Trice, B. Michael, C. Trumbauer, T. Parham, R. Golden, P. Tango, M. McGinty.
- 11:45 FORECASTING THE POTENTIAL EFFECTS OF RELATIVE SEA LEVEL RISE ON COASTAL MARSH HABITATS IN NORTH CAROLINA. Buzzelli*, C., M. Piehler.
- 12:00 – 1:30 **Lunch/Poster Session**

Contributed Presentations

March 16, 2007

Session II

Moderated by Julie Ambler

- 1:30pm EFFECTS OF LAND USE LAND COVER CHANGE ON BLUE CRAB POPULATIONS IN ESTUARINE NURSERIES IN NORTH CAROLINA. Meyer*, G., J. Luczkovich, M. Brinson, and T. West.
- 1:45 FACTORS EXERTING INFLUENCE OVER FLOW HYDRODYNAMICS AND SUSPENDED SEDIMENT AVAILABILITY IN THE INTERIOR OF A SPARTINA ALTERNIFLORA MARSH IN SOUTHEASTERN NORTH CAROLINA. Althof*, S., A. Croft, L. Leonard.
- 2:00 HYDROLOGY STUDY: CUTTING EDISTO BEACH CAUSEWAY AND RECONNECTING SCOTT CREEK ESTUARIES. Armstrong*, S., F. Arega, B. Hockensmith, A.W. Badr, J.D. Whitaker.
- 2:15 SEDIMENT DEPOSITION AND AVAILABILITY IN RIPARIAN WETLANDS OF THE LOWER CAPE FEAR RIVER ESTUARY. Eulie*, D., L. Leonard, A. Croft.
- 2:30 NEKTON REMINERALIZATION OF AMMONIUM IN MARSH CREEK INTERTIDAL POOLS. Luthy*, S.A., D. M. Allen, J. A. Garwood.
- 2:45 LINKING BENTHIC MICROALGAE TO COUPLED DENITRIFICATION. Tobias*, C.
- 3:00 – 3:30 **Break**
Moderated by Gulnihal Ozbay
- 3:30 IMPORTANCE OF SUBMARINE GROUNDWATER DISCHARGE AS A SOURCE OF NUTRIENTS FOR THE NEUSE RIVER ESTUARY, NC, USA. Fear*, J.M., H.W. Paerl, J. Braddy.
- 3:45 CELESTIAL EFFECTS ON NITROGEN CYCLING IN THE INTERTIDAL RIPARIAN ZONE OF THE NEWPORT RIVER, NORTH CAROLINA. Ensign*, S.H., M.F. Piehler, M.W. Doyle.
- 4:00 THE EFFECTS OF THE INSECTICIDE BIFENTHRIN ON THE GRASS SHRIMP, *Palaemonetes pugio* AND THE SHEEPSHEAD MINNOW, *Cyprinodon variegatus*. Harper*, H., P. Pennington, M. DeLorenzo, P. Key, J. Weinstein, M. Fulton.
- 4:15 HIGH-FREQUENCY WATER QUALITY MONITORING IN INDIAN RIVER LAGOON: YEAR 1 RESULTS. Hanisak*, M.D., K. Sanderson, P. Monaghan.
- 4:30 DISTRIBUTION, CONCENTRATION AND EFFECTS OF TRICLOSAN, TRICLOCARBAN, AND METHYL-TRICLOSAN IN ESTUARINE ECOSYSTEMS OF GEORGIA. Palefsky*, W.
- 5:00 - 6:00 Poster session
- 6:30 – 7:00 AERS & SEERS Business Meetings
- 7:00 – 10:00 Happy Hour and Oyster Roast Banquet at Duke Marine Lab

Contributed Presentations

March 17, 2007

- 8:00 – 8:15 Opening Remarks
Moderated by Louise Wooton
- 8:15 SPECTRAL IRRADIANCE, CDOM, AND PHYTOPLANKTON
COMMUNITY COMPOSITION IN A BLACKWATER-
DOMINATED ESTUARY (WINYAH BAY, SC, USA). Lawrenz*,
E., T. Richardson.
- 8:30 HYPOXIA REMOVES THE LOW-DENSITY REFUGE FROM
PREDATORS FOR *Macoma balthica*. Long*, W.C., R.D. Seitz, B.J.
Brylawski.
- 8:45 PARTICLE SELECTION OF A SURFACE DEPOSIT-FEEDING
BIVALVE AND A SURFACE DEPOSIT-FEEDING
POLYCHAETE: CONSIDERATIONS OF MORPHOLOGY AND
FUNCTION. Mahon*, H.K., D.M. Dauer.
- 9:00 GROWTH, SURVIVAL, AND CONDITION OF THE THIN-
SHELLED CLAM, *MACOMA BALTHICA*, IN THE YORK RIVER,
VIRGINIA. Brylawski*, B.J., R.D. Seitz.
- 9:15 DIET DIFFERENCES IN THE MUMMICHOG, *Fundulus heteroclitus*,
COMPARING POPULATIONS FROM TIDAL CREEKS WITH
HIGHLY URBANIZED AND HIGHLY FORESTED
WATERSHEDS IN CHESAPEAKE BAY, USA. Walsh*, C.G., D.M.
Dauer.
- 9:30 DOES BENTHIC WEATHER AFFECT FISH SOUND
PRODUCTION? Luczkovich, J.J., M.W. Sprague, J.P. Walsh, D.R.
Corbett, S. Dillard.
- 9:45 – 10:15 **Break**
Moderated by Jay Pinckney
- 10:15 BENTHIC MICROALGAL COMMUNITY COMPOSITION AND
SPATIOTEMPORAL DYNAMICS IN A SHALLOW, TURBID
ESTUARY. Pinckney*, J.
- 10:30 WILL CLIMATE CHANGE MAKE ESTUARIES LESS
PRODUCTIVE? INSIGHTS FROM ESTUARINE MICROBIAL
PRODUCTIVITY. Peierls*, B.L., H.W. Paerl.
- 10:45 EL NIÑO – SOUTHERN OSCILLATION EFFECTS ON RIVER
DISCHARGE IN THE SOUTHEAST UNITED STATES:
COUPLING WITH THE COASTAL OCEAN. Blum*, J., S. Ensign,
S. Slingsby, L. Cahoon.
- 11:00 INTERACTIONS OF SALINITY, MARSH FRAGMENTATION, AND
SUBMERGED AQUATIC VEGETATION ON RESIDENT MARSH
NEKTON ASSEMBLAGES IN COASTAL LOUISIANA. Hitch*, A.
- 11:15 INITIAL OBSERVATIONS OF NORTH CAROLINA SHORELINE
CHANGES USING JAPANESE ALOS PALSAR AND JERS-1 SAR
DATA. Yong Wang* and Thomas Allen.
- 11:30 – 12:00 Student Awards and Closing Remarks

Contributed Posters

A GEOSPATIAL APPROACH TO ESTUARINE CLASSIFICATION IN CHINCOTEAGUE BAY. Allen*, T.R.

RELATIONSHIP OF SUMMER CLADOCERAN-PELAGIC TUNICATE ASSEMBLAGES TO TEMPERATURE, SALINITY AND CHLOROPHYLL A IN THE MID-ATLANTIC BIGHT. Ambler*, J.W., E. McLenegan, T.A. Moisan, J.L. Blanco, C.P. Makinen, K. VanSant.

SHORT-TERM SEDIMENT DEPOSITION ON TWO FRINGING SALT MARSHES, BEAUFORT, NORTH CAROLINA. Dick*, K.

INTERACTIVE EFFECTS OF DROUGHT SEVERITY, HURRICANES, AND SEA-LEVEL RISE ON TIDAL FRESHWATER FORESTED WETLANDS OF THE SOUTHEAST UNDER A CHANGING CLIMATE REGIME. Duberstein*, J., W.H. Conner, K.W. Krauss, T.W. Doyle.

ISOTOPIC ENRICHMENT LEVELS OF AN URBANIZED SOUTHEASTERN TIDAL CREEK. Duernberger*, K.

PHYTOPLANKTON DIVERSITY, PRODUCTIVITY, AND STABILITY RELATIONSHIPS IN THE LOWER CHESAPEAKE BAY. Egerton*, T.A., C.A. Binckley, H.G. Marshall, K.K. Nesius.

THE EFFECTS OF HURRICANES AND HYDROLIC MODIFICATION ON WATER QUALITY ALONG AN ESTUARINE GRADIENT IN THE TERREBONNE BASIN IN SOUTHEAST LOUISIANA. Finelli*, C., L. Rodrigue.

MEASURING THE EFFECTS OF DECOMPOSITION OF A MACROALGAL BLOOM ON SEDIMENT METABOLISM. Funkey*, C.P., I.C. Anderson, E.A. Canuel, A.K. Hardison.

COMPARISON OF THE EFFECTS OF TWO VERTICAL MIXING PARAMETERIZATIONS IN A COASTAL OCEAN MODEL. Hsu*, M., C. Tilburg.

CHARACTERIZATION OF MAINLAND TERRESTRIAL ESTUARINE SHOREZONES IN NORTH CAROLINA. Kunz*, D.M., M.M. Brinson.

MANGROVES ON THE MOVE: THE NORTHERN EXPANSION OF MANGROVES INTO THE SALTMARSH OF THE GTM NERR. Leitholf*, S., J. Weishampel.

THE SITE FIDELITY OF *Palaemonetes spp.* IN NORTH INLET, S.C. Ludwig*, K., S. Luthy, D. Allen, R. Young.

CAN MARSH HEALTH BE ASSESS USING ORGANISMAL GROWTH AND DENSITY? Mace*, T., M.C. Curran.

Contributed Posters

- FILTRATION EFFICIENCY OF A FRESHWATER ESTUARINE MUSSEL (*Elliptio complanata*) AND ITS POTENTIAL USE IN AQUACULTURE PONDS. McKenzie*, J. F., G. Ozbay, D. McIntosh.
- EVALUATION OF BOTTOM BOUNDARY LAYER MODEL OUTPUT IN RESPONSE TO CHANGING BOTTOM CHARACTERISTICS IN THE NEAR SHORE, LONG BAY, NORTH CAROLINA. Medley*, P., L. Leonard, L. Davis.
- SOUNDS LIKE HYDROACOUSTICS IS THE WAY TO MAP MACROALGAE – GET THE DRIFT? Morris*, L.J., R.W. Virnstein, J.S. Steward, B. Riegl.
- ELIZABETH CITY STATE UNIVERSITY SUBMERGED AQUATIC VEGETATION TRANSECT SURVEYS IN CURRITUCK SOUND, NORTH CAROLINA, AND BACK BAY, VIRGINIA. Noblitt*, S.R., E.L. Brinker.
- NUTRIENTS IN SEDIMENT ASSOCIATED TO *Sarcocornia alpini* (Lag.) Castroviejo, A SALT MARSH SPECIE OF MEDITERRANEAN AREAS (PALMONES RIVER, SOUTHERN SPAIN). Palomo*, L., J.J. Izquierdo, F.X. Niell.
- OYSTER AND WATER QUALITY STUDIES AT HOOP POLE CREEK, ATLANTIC BEACH, NC. Ringwood*, A.H., A. Brunson, S. Vaughan, B. Foster, T. Changela.
- ABOVE AND BELOWGROUND BIOMASS FOR *Spartina alterniflora* IN FIVE GEORGIA MARSH DIEBACK SITES. Robinson*, S.O., M.C. Curran, D.L. Hoskins.
- HORIZONTAL AND VERTICAL SPATIAL DISTRIBUTION OF FIDDLER CRAB (*Uca spp.*) AND GREEN PORCELAIN CRAB (*Petrolisthes armatus*) LARVAE OVER TWO TIDAL CYCLES IN THE SATILLA RIVER ESTUARY, GEORGIA. Seay*, J.E., T.D. Bishop, H.L. Miller III, P. Christian, C.E. Tilburg.
- INTERTIDAL MOVEMENT AND BEHAVIOR OF THE KNOBBED WHELK, *Busycon carica* (Gmelin 1791), IN WASSAW SOUND, GA. Shalack*, J., R.L. Walker, A.J. Power.
- DETECTING CLIMATE SIGNALS IN RIVER DISCHARGE AND PRECIPITATION DATA FOR THE CENTRAL GEORGIA COAST. Sheldon*, J., A. Burd.
- ARMORING THE ESTUARY: THE EFFECTS OF BULKHEADS ON SALT MARSH HABITATS. Smyth*, A.R., Z.F. Williams, J. Hester, A. Kitto, E. Newland, E. Poarch, R.T. Noble, C.H. Peterson, M.F. Piehler.
- THE USE OF PCR AS A MEANS OF IDENTIFYING SOURCES OF FECAL BACTERIA IN THE TIDAL CREEKS OF NEW HANOVER COUNTY, NORTH CAROLINA. Spivey*, M.I.H., M.A. Mallin, B. Song, P.A. Rublee.

Contributed Posters

COMPLEMENTING OYSTER RECOVERY EFFORTS IN CHESAPEAKE BAY WITH DATA FROM A COASTAL OBSERVING SYSTEM. Steppe*, C., D. Fredriksson, D. Novotney, A. Barlow, L. Wallendorf, K. Zepp.

HABITAT SPECIFIC CHEMICAL AND GENE EXPRESSION SIGNATURES IN YOUNG OF THE YEAR BLUEFISH. Straub*, P.F., M.L. Higham, W.C. Phoel.

DEMONSTRATION OF A UHF RADAR IN A SINUOUS TIDAL CHANNEL. Styles*, R., M. Schuler, C. Teague, D. Barrick.

INTERACTIONS OF MACROALGAE WITH SEAGRASS: FRIEND OR FOE? Virnstein*, R., L. Morris, J. Steward.

HABITAT MAPPING AND COVERAGE ANALYSES AS A REFERENCE FOR FUTURE RESEARCH WITHIN THE NORTH CAROLINA NATIONAL ESTUARINE RESEARCH RESERVES. Wells*, H.A., J.S. Ott, J.M. Fear.

PRELIMINARY INVESTIGATIONS INTO THE OCCURRENCE OF A NOVEL PARASITE (*Bonamia* sp.) IN THE EASTERN OYSTER, *Crassostrea virginica*. Wilbur*, A.E., J.D. Gauthier, T.D. Alphin, M.H. Posey.

MODELING OF THE CAPE FEAR RIVER ESTUARY PLUME. Xia*, M., L. Xie, L.J. Pietrafesa.

HOURLY PATTERNS IN THE EXCRETION OF NITROGEN BY THE COMMON MARSH MUMMICHOG, *Fundulus heteroclitus*. Zeigler*, E.K., S. Luthy, D. Allen, K. Walters, R. Young, J. Garwood.