

# Southeastern Estuarine Research Society Semiannual Meeting

March 29-31, 2001  
Charleston, SC

52 PAPERS  
(24 ORAL  
28 POSTER)

110 REGISTRATION



## **PROGRAM**

On Thursday evening, registration and the social will be held outdoors in the picnic area of the Ft. Johnson Marine complex. Friday, registration and the poster sessions will be located in the lobby of the Marine Resources Research Institute (MRRI). Oral presentation sessions will take place in the auditorium of the Marine Resources Research Institute. The banquet on Friday evening will be held outdoors in the picnic area.

### **THURSDAY 29 MARCH**

**6:00 – 8:00 p.m.**                      **Registration (MRRI picnic area)**

**6:00 – 8:00 p.m.**                      **Social (MRRI picnic area)**

### **FRIDAY 30 MARCH**

**8:00 – 12:10 am**                      **Registration (MRRI lobby)**

**8:00 – 8:30**                              **Set up Posters**

**8:30 – 10:00**                              **Welcome & Oral Presentation Session A**

**10:00 – 10:20**                              **Break (posters available)**

**10:20 – 12:00**                              **Oral Presentation Session B**

**12:00 – 1:00 p.m.**                      **Lunch (MRRI picnic area)**

**1:00 – 2:40**                              **Oral Presentation Session C**

**2:40 – 3:00**                              **Break (posters available)**

**3:00 – 4:00**                              **Oral Presentation Session D**

**4:00 – 4:40**                              **SEERS Business Meeting**

**4:40 – 6:00**                              **Poster Session (presenters with posters)**

**6:00 – 9:30**                              **Social and Banquet (MRRI picnic area)**

### **SATURDAY 31 MARCH**

**8:30 – 9:50 a.m.**                      **Oral Presentation Session E**

**9:50 – 10:30**                              **Break & Poster Session (presenters with posters)**

**10:30 – 11:30**                              **Oral Presentation Session F**

**11:30 p.m.**                              **Optional Tour of MRRI. Take down posters**



## TECHNICAL SESSIONS

(\*\*) denotes undergraduate student presentation      (\*) denotes graduate student presentation

### ORAL PRESENTATIONS

**Friday, 8:30 – 10:00 a.m.**

**Session A**

**Moderator: Dave Tomasko**

WELCOME      Evan Chipouras, SEERS President.  
Fred Holland & Pam Jutte, Local Hosts  
Geno Olmi, Program Chair

HYDROLOGIC AND SALINITY STUDIES OF TIDAL FRESHWATER MARSHES OF THE SAVANNAH  
NATIONAL WILDLIFE REFUGE

\*John Bossart, University of Florida and Applied Technology & Management, Inc.  
George M. Otto, Applied Technology & Management, Inc.  
Clay Montague, University of Florida

EFFECTS OF STORMWATER RUN-OFF ON TIDAL EXCHANGE IN COASTAL ESTUARIES

\*Jason Hales, Center for Marine Science, University of North Carolina at Wilmington

RAINFALL ENHANCED SEDIMENT MOBILITY IN A SOUTHEASTERN, MESOTIDAL ESTUARY

\*Mwasi J. Mwamba and Raymond Torres, Department of Geological Sciences, University of South  
Carolina

WATER MASSES SEPARATION AND SHRIMP DISTRIBUTION IN AN INTENSIVE SHRIMP CULTURE POND

\*Paola Calle Delgado, University of South Carolina  
Yoram Avnimelech, Department of Agricultural Engineering, ISRAEL  
Delma Bratvold, Waddell Mariculture Center, SCDNR  
Craig Bowdy, Waddell Mariculture Center, SCDNR  
Paul Sandifer, South Carolina Department of Natural Resources

**Friday, 10:20 a.m. – 12:00 p.m.**

**Session B**

**Moderator: Karen Burnett**

TEMPORAL EFFECTS OF SOIL pH, REDOX POTENTIAL, AND ELEVATION ON *SPARTINA PATENS* PLANTED  
AT A WEST CENTRAL FLORIDA SALT MARSH RESTORATION SITE

Christopher J. Anastasiou, Southwest Florida Water Management District  
J. Renee Brooks, U.S. Environmental Protection Agency

THE USE OF HIGH MOLECULAR WEIGHT DISSOLVED ORGANIC MATTER BY PHYTOPLANKTON

\*Bonnie M. Willis, University of South Carolina, Marine Science Program  
Alan J. Lewitus, Belle W. Baruch Institute, University of South Carolina and Marine Resources  
Research Institute, South Carolina Department of Natural Resources

THE EFFECTS OF pH ON THE INNATE IMMUNE RESPONSE OF THE EASTERN OYSTER, *CRASSOSTREA*  
*VIRGINICA*

\*Steven Allen and Louis Burnett, Grice Marine Laboratory, University of Charleston



THE EFFECTS OF OXIDATIVE STRESS ON OYSTERS, *CRASSOSTREA VIRGINICA*

\*Jennifer Hoguet, University of Charleston, SC

Amy H. Ringwood, Ph.D., Marine Resources Research Institute, SCDNR

EFFECTS OF HYPERCAPNIC HYPOXIA ON THE BACTERICIDAL ACTIVITY AND ROI PRODUCTION OF HEMOCYTES FROM THE PENAEID SHRIMP *LITOPENAEUS VANNAMEI*

\*Austin S. Dantzler, Karen G. Burnett, and Louis E. Burnett, University of Charleston, Grice Marine Laboratory

Friday, 1:00 – 2:40 p.m.

Session C

Moderator: Carla Curran

DETERMINING BLUE CRAB (*CALLINECTES SAPIDUS*) USE OF SALT MARSH WITH THE AID OF ULTRASONIC BIOTELEMETRY

\*Amanda B. Wrona and Richard G. Wiegert, Dept. of Marine Sciences, University of Georgia

28  
11/28 = 2.47

WHY HAVE BLUE CRABS DISAPPEARED FROM A GEORGIA SALT MARSH ESTUARY?

\*\*Michael Sheppard, Savannah State University

Marc Frischer and Richard Lee, Skidaway Institute of Oceanography

RECRUITMENT, GROWTH AND DISTRIBUTION OF JUVENILE *MUGIL CEPHALUS* WITHIN THE CHARLESTON HARBOR ESTUARY, SOUTH CAROLINA.

Christopher J. McDonough, SC Department of Natural Resources

SPAWN OUT FREE  
FROM BACK ASHING  
200M

NUMBER OF CAPTURED  
A GOOD SUBSTITUTE  
FOR AGE DATED

AN ANALYSIS OF THE IMPACT OF FISHING PRESSURE ON FISH COMMUNITY STRUCTURE OF ARTIFICIAL REEFS OFF THE COAST OF SOUTH CAROLINA

\*Hansje Gold, Environmental Studies Program, University of Charleston, SC

C. Barans and M. Bell, Marine Resources Research Institute, SCDNR

A. Harold, University of Charleston, SC

P. Jutte, Marine Resources Research Institute, SCDNR

(SLOPES SIMILAR -  
CV + SIZE RANK  
DISTR)

ALSO SIMILAR)

NOT MUCH DIFFERENCE

TROPHIC SUBSIDIES IN THE TWILIGHT ZONE: FOOD WEB STRUCTURE OF DEEP REEF FISHES OF THE SOUTHEASTERN UNITED STATES

\*Douglas C. Weaver, Department of Fisheries and Aquatic Sciences, University of Florida

Friday, 3:00 – 4:00 p.m.

Session D

Moderator: John Dwyer

THE EFFECTS OF DENSITY AND AGGREGATION ON PREDATOR DETERRENCE BY BROMOPHENOL-PRODUCING INFAUNA

\*Deidre R. Edwards, University of South Carolina, Columbia.

S.A. Woodin, University of South Carolina, Columbia

WHITE SHRIMP GUT PASSAGE TIME AND NITROGEN ASSIMILATION EFFICIENCY AS A FUNCTION OF FEED QUALITY

\*Jessica A. Stephen and Robert J. Feller, Marine Science Program, University of South Carolina

SESTON OVER OYSTER REEFS: OBSERVATIONS OVER SEASONAL, TIDAL, AND SPATIAL SCALES IN THE DUPLIN RIVER, SAPELO ISLAND NATIONAL ESTUARINE RESEARCH RESERVE (SINERR)

\*Merrilee Thoresen and Merryl Alber, University of Georgia



**Saturday, 8:30 – 9:50 a.m.**

**Session E**

**Moderator: Eric Koepfler**

THE GEOCHEMICAL PARTITIONING AND SPECIATION OF MERCURY IN THE WACCAMAW RIVER-WINYAH BAY ESTUARY, SOUTH CAROLINA, USA

Jane L. Guentzel, Dept. of Marine Science, Coastal Carolina University

DEVELOPMENT OF A POLLUTANT LOAD REDUCTION GOAL FOR CHARLOTTE HARBOR, FLORIDA

David A. Tomasko, Southwest Florida Water Management District

IMPACT OF MICROZOOPLANKTON GRAZING ON PHYTOPLANKTON BIOMASS COMPOSITION IN A SALT MARSH ESTUARY

Kenneth C. Hayes, Baruch Institute, University of South Carolina and SC Department of Health and Environmental Control; Michael S. Wetz, Baruch Institute, University of South Carolina; Alan J. Lewitus, Baruch Institute, University of South Carolina and SC Department of Natural Resources; Jennifer Wolny, SC Department of Natural Resources

IMPACT OF OYSTER GRAZING ON PHYTOPLANKTON BIOMASS AND COMPOSITION IN A SALT MARSH ESTUARY

Michael S. Wetz, Baruch Institute, University of South Carolina

Kenneth C. Hayes, SC DHEC and Baruch Institute, University of South Carolina

Alan J. Lewitus (presenting), Baruch Institute, University of South Carolina and Marine Resources Research Institute, SC DNR

**Saturday, 10:30 – 11:30 a.m.**

**Session F**

**Moderator: Geno Olmi**

USE OF RANDOM LONG TERM FISHERIES INDEPENDENT DATA TO EVALUATE IMPACT OF STOCKING RED DRUM

Michael R. Denson, Wallace E. Jenkins, Theodore I.J. Smith, and Charles Bridgham, Marine Resources Research Institute, SCDNR

GIS AND SPATIAL ANALYSIS: UNDERSTANDING PROCESS FROM PATTERN

Laura Kracker, NOAA National Ocean Service – Center for Coastal Environmental Health and Biomolecular Research

ESTIMATING ABOVE-GROUND SEAGRASS BIOMASS IN THE INDIAN RIVER LAGOON USING NON-DESTRUCTIVE METHODS

Lori J. Morris, St. Johns River Water Management District

M. Dennis Hanisak, Harbor Branch Oceanographic Institute

Edward W. Carter, Jones, Edmunds and Associates, Inc. (SJRWMD)



## POSTER PRESENTATIONS

*Presenters should put up their posters Friday morning and leave them up until the end of the meeting. Poster presenters should attend their posters during the poster sessions on Friday afternoon (4:40 – 6:00) and Saturday morning (10:30-11:30).*

### COMPARING NEKTON OCCUPATION AND PRODUCTION TO ENVIRONMENTAL CONDITIONS IN AN ESTUARINE NURSERY HABITAT

Dennis Allen, Ginger Ogburn-Matthews, and Richert Lehnert, Baruch Marine Field Station, University of South Carolina

### CREEK USE OF THE GRASS SHRIMP *PALAEMONETES PUGIO* IN A SOUTH CAROLINA ESTUARY

**\*\*Brad Blythe**, Coastal Carolina University, Marine Science Dept.

### EVIDENCE FOR PHOSPHORUS LIMITATION IN THE WINYAH BAY ESTUARY, GEORGETOWN, SOUTH CAROLINA

**\*\*Melissa Clouse**, Marine Science Program and Honors College, University of South Carolina; Jaclin Durant, Department of Biological Sciences and Honors College, University of South Carolina; Lindsey Wise, Department of Chemical Engineering and Marine Science Program, University of South Carolina; Melissa Ranhofer, Marine Science Program, University of South Carolina

### RECOVERY OF MEIOFAUNA IN STINGRAY FEEDING PITS

Randall E. Cross and Mary Carla Curran, University of South Carolina Beaufort

### THE INCIDENCE OF PARASITISM OF GRASS SHRIMP BY A BOPYRID ISOPOD

Mary Carla Curran, University of South Carolina Beaufort

### AERIAL PHOTOGRAPHY OF ESTUARINE FRONTAL BOUNDARIES, WINYAH BAY, SC

**\*\*Norman J. Dodson**, MARE, Marine Science Program, University of South Carolina  
Edward Majzlik, MARE, Marine Science Program, University of South Carolina  
Straud Armstrong, MARE, Department of Geology, University of South Carolina

### NATURAL AND ANTHROPOGENIC INFLUENCES ON STABLE ISOTOPE GRADIENTS IN PARTIALLY-MIXED ESTUARIES AND IMPLICATIONS FOR TRACING THE SOURCES AND FATE OF ESTUARINE ORGANIC CARBON

Stefka G. Nikolova Eddins, University of South Carolina

### FLUSHING TIME OF THE CAPE FEAR RIVER ESTUARY

Scott H. Ensign and Michael A. Mallin, UNCW Center for Marine Science  
Joanne N. Halls, UNCW Department of Earth Sciences

### SUBCELLULAR EFFECTS OF *IN VIVO* HEXAVALENT CHROMIUM EXPOSURE ON THE DIGESTIVE GLAND AND HEMOCYTES OF *CRASSOSTREA VIRGINICA*

**\*Michel Lynn Gielazyn**, University of South Carolina, Marine Science Program  
A. H. Ringwood, SCDNR, Marine Resources Research Institute  
S. E. Stancyk, University of South Carolina, Marine Science Program  
W. W. Piegorsch, University of South Carolina, Department of Statistics



DISTRIBUTION OF *LITTORARIA* AND *MELAMPUS* IN THE SALT MARSHES OF THE SATILLA RIVER ESTUARY

\*\*Gretchen E. Goodbody, Merryl Alber, and Dale Bishop, University of Georgia

PRELIMINARY OBSERVATIONS ON THE SYMBIOTIC RELATIONSHIP BETWEEN THE PEA CRAB (*TUMIDOTHERES MACULATUS*) AND THE SEA SQUIRT (*STYELA PLICATA*) IN TAMPA BAY, FL

\*Jeff Grim, and Anthony DiGirolamo, University of Tampa

A FUNCTIONAL GENOMICS APPROACH TO HOST IMMUNE RESPONSE AMONG PENAEID SHRIMP, *PENAEUS VANNAMEI* AND *P. SETIFERUS* AND ASSESSMENT OF WSV IN WILD STOCKS

P. Gross<sup>1</sup>, \*R. Chapman<sup>2</sup> (presenting), C. Browdy<sup>3</sup>, S. Priors<sup>3</sup>, Tom Bartlett<sup>1</sup>, Javier Robalino<sup>1</sup>, Brandon Cuthbertson<sup>1</sup>, Suzannne Savin<sup>2</sup>, Eleanor Shepard<sup>2</sup>, and G. Warr<sup>1</sup>

1 Department of Biochemistry, Medical University of South Carolina

2 Marine Resources Research Institute, SCDNR

3 Waddell Mariculture Center

SALINITY STUDY OF RIVERS ALONG SOUTHERN COASTAL SOUTH CAROLINA

Brenda L. Hockensmith, SCDNR-Land, Water & Conservation

MARK AND RECAPTURE OF BLUE CRABS *CALLINECTES SAPIDUS*

\*\*Heather Hostetler and Richard F. Dame, Coastal Carolina University

EFFECTS OF A CONTROLLED FOREST BURN ON ESTUARINE NUTRIENT CONCENTRATIONS IN THOUSAND ACRE MARSH (PART OF THE NORTH INLET-WINYAH BAY NATIONAL ESTUARINE RESEARCH RESERVE).

Jennifer L. Jarrell, William V. Johnson, Andrew M. Lohrer, Dennis M. Allen, North Inlet – Winyah Bay NERR, Baruch Marine Field Laboratory, University of South Carolina

FEEDING ECOLOGY OF TWO SPECIES OF FINFISH BENTHIVORES IN SOUTH CAROLINA TIDAL CREEKS

\*Jennifer F. Jefferies, Grice Marine Laboratory, University of Charleston, SC

Pamela C. Jutte and George Sedberry, Marine Resources Research Institute, SCDNR

ABSENCE OF *MONOPYLEPHORUS RUBRONIVEUS* IN FISH FEEDING STUDIES

\*\*Tiffany Lee, Savannah State University, Savannah, GA

David Gillett, University of Charleston, Charleston, SC

DISPLACEMENT OF FRESHWATER DURING FLOOD TIDE INTO GEORGETOWN HARBOR, SOUTH CAROLINA

\*\*Edward Majzlik, MARE, Marine Science Program, University of South Carolina

Straud Armstrong, MARE, Department of Geology, University of South Carolina

Norman J Dodson, MARE, Marine Science Program, University of South Carolina

Todd Pumphrey, MARE, Department of Geography, University of South Carolina

PRELIMINARY IMPACTS OF SEWAGE DIVERSION ON THE NEW RIVER ESTUARY

Michael A. Mallin, Matthew R. McIver, Douglas C. Parsons, Scott H. Ensign, G. Christopher Shank, Virginia L. Johnson and Heather A. CoVan, Center for Marine Science, University of North Carolina at Wilmington



STATUS AND TRENDS OF WATER QUALITY IN THE NORTHERN COASTAL BASINS OF FLORIDA  
Jan D. Miller and Gilbert C. Sigua, St. Johns River Water Management District

MEASURING NITROGEN REMOVAL FROM A CONSTRUCTED WETLAND RECEIVING AGRICULTURAL RUNOFF

\*Amy C. Poe, Suzanne P. Thompson, Michael F. Piehler, Hans W. Paerl  
The University of North Carolina at Chapel Hill, Institute of Marine Sciences

VISUAL AND OLFACTORY RESPONSES OF GRASS SHRIMP TO MUMMICHOG PREDATORS: WHICH CUES ELICIT AVOIDANCE BEHAVIOR?

Michael Potthoff, Dennis M. Allen, and Elizabeth Brost, Baruch Marine Field Laboratory, University of South Carolina; Robert F. Young, Marine Science Dept. Coastal Carolina Univ.

COMPARISON OF TOTAL SUSPENDED MATTER FLUCTUATIONS OVER AN EIGHT-HOUR CRUISE AND TWO THIRTY-HOUR TIME SERIES EXPERIMENTS, WINYAH BAY ESTUARY, SOUTH CAROLINA

\*\*Melissa L. Ranhofer, Eddie Majzlik, Straud Armstrong, Lindsey Wise,  
M.A.R.E. Program, University of South Carolina

A STUDY ON THE PHYSIOLOGICAL STRESS OF PROLONGED DECREASED SALINITY ON THE DISTRIBUTION OF MACRO-INVERTEBRATES IN MUD BAY, WINYAH BAY, SC

Christie A. Robinson, USC Honors College of the University of South Carolina

Traci J. Heincelman, USC Honors College of the University of South Carolina

\*\*Daniel P. Foy (presenting), Marine Science Program of the University of South Carolina  
Harold L. Jett III, Marine Science Program of the University of South Carolina

TIDAL EXCHANGE OF DISSOLVED NUTRIENTS IN TIDAL FRESHWATER WETLANDS OF THE UPPER COOPER RIVER, SC

\*P. Saroprayogi, School of the Environment, USC; H. McKellar and M. Alford, Dept. Environmental Health Science, USC, and J. Kelley, Biology Dept., The Citadel

EVALUATION OF THE UTILITY AND ACCURACY OF LIDAR AND IFSAR DERIVED DIGITAL ELEVATION MODELS FOR FLOOD PLAIN MAPPING

\*Laura B. Schmidt, George T. Raber, John R. Jensen, Michael E. Hodgson,  
Steven S. Schill, Department of Geography, University of South Carolina

DISTRIBUTION OF TWO SALT MARSH BANK SPECIES ALONG A SALINITY GRADIENT IN THE ALTAMAHA RIVER ESTUARY: A FRACTION OF THE SUM

\*Susan White and Merryl Alber, University of Georgia

EFFECTS OF SEASONALITY ON MACROBENTHIC COMMUNITY STRUCTURE IN SUBTIDAL HABITATS OF CHARLESTON HARBOR AND SURROUNDING AREAS.

Lynn E. Zimmerman, Robert F. Van Dolah, and Amy H. Ringwood, South Carolina Department of Natural Resources, Marine Resources Division