

New England Estuarine Research Society

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THE 1990 FALL MEETING

25-27 OCTOBER 1990 * NEWPORT, RHODE ISLAND**

JOINTLY HOSTED BY

**THE GRADUATE SCHOOL OF OCEANOGRAPHY
UNIVERSITY OF RHODE ISLAND**

AND

**THE ENVIRONMENTAL RESEARCH LABORATORY, NARRAGANSETT
ENVIRONMENTAL PROTECTION AGENCY**

PROGRAM

MEETING SITE : Newport, Rhode Island is where it is all happening. The meeting site for all activities is the Greenhouse Inn at Easton's Beach, on Memorial Blvd.

Thursday, 25 October

SPECIAL SYMPOSIUM: ESTUARINE EUTROPHICATION, REVISITED
Conference Room, The Greenhouse Inn

0745-1030 Registration

SESSION I: Approaches to the Study of Estuarine Eutrophication
Presiding: Jonathan Garber

0800 J.H. GARBER and N.A. JAWORSKI, US Environmental Protection Agency,
Environmental Research Laboratory, Narragansett.
WELCOME AND INTRODUCTION TO THE SESSION.

0815 IVAN VALIELA, Boston University Marine Program, Woods Hole, Massachusetts.
NATURAL AND ANTHROPOGENIC NUTRIENT SOURCES IN COASTAL
ECOSYSTEMS: LESSONS FROM BUTTERMILK BAY

0845 DOMINIC DITORO and JAMES FITZPATRICK, HydroQual, Inc., Mahweh, NJ
RECENT DEVELOPMENTS IN THE PREDICTIVE CAPABILITY OF WATER
QUALITY MODELS

0915 JAMES KREMER, Marine Biology Research Section, Department of Biology,
University of Southern California, Los Angeles, California.
TOTAL SYSTEM METABOLISM (TSM) AS AN INDICATOR OF
COASTAL EUTROPHICATION.

0945 B.L. NOWICKI, Marine Ecosystem Research Laboratory, Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island.
ECOSYSTEM-LEVEL RESPONSES TO NUTRIENT ADDITIONS AND THE FATE OF NUTRIENT INPUTS TO ESTUARIES: AN OVERVIEW OF NUTRIENT ADDITION EXPERIMENTS AT MERE

1015 COFFEE BREAK

1030 B.L. WELSH, D. DRAPEAU, and J. JOHNSON, Marine Sciences Department, University of Connecticut, Groton, Connecticut.
OCCURRENCE AND PERSISTENCE OF HYPOXIA IN STRATIFIED SYSTEMS: A COMPARATIVE APPROACH.

Session II: Comparative Ecosystem Studies

1100 T.J. SMAYDA, Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island.
EVIDENCE FOR GLOBAL CHANGE IN NUTRIENT LOADING OF COASTAL WATERS

1130 SCOTT W. NIXON, Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island.
RELATIONSHIPS BETWEEN NUTRIENT LOADING RATES AND PRODUCTIVITY OF AQUATIC ECOSYSTEMS

1200 LUNCH

1315 JONATHAN GARBER, US Environmental Protection Agency, and WALTER BOYNTON, UMCEES, Chesapeake Biological Laboratory.
TOWARDS AN ESTUARINE "VOLLENWEIDER" PLOT: ANALYSIS OF RELATIONSHIPS BETWEEN NUTRIENT LOADING AND ALGAL BIOMASS IN CHESAPEAKE BAY

SESSION III: Analysis of Two Case Studies: Waquoit Bay & Massachusetts Bay

1345-1515 WAQUOIT BAY Presiding:
Ivan Valiela

1345 I. VALIELA, Boston University Marine Program, Woods Hole, Massachusetts.
OVERVIEW OF WAQUOIT BAY LMER PROGRAM.

1350 P. PECKOL, B. DEMEO-ANDERSON, M. MALDONADO, J. WEINER, and J. YATES, Department of Biological Sciences, Smith College, Northampton, Massachusetts.
EFFECTS OF NUTRIENT LOADING ON MACROALGAL PRODUCTIVITY AND GROWTH: ALGALBUSTERS ON THE LOOSE.

1405 D. HERSH, Boston University Marine Program, Woods Hole, Massachusetts.
SEASONAL DISTRIBUTION OF MACROALGAL BIOMASS.

1420 KENNETH H. FORMAN, Boston University Marine Program, Woods Hole, Massachusetts.
PHYTOPLANKTON PRODUCTION DYNAMICS.

1435 C. D'AVANZO, School of Natural Science, Hampshire College, Amherst, Massachusetts, and J. KREMER, Department of Biological Sciences, University of Southern California, Los Angeles, California.
OXYGEN DYNAMICS IN AN EUTROPHIC EMBAYMENT.

- 1450 JAMES N. KREMER, Marine Biology Research Section, Department of Biology.
University of Southern California, Los Angeles, California.
SELF-DOCUMENTING SIMULATION MODELS IN THE WAQUOIT BAY
LMER PROJECT.
- 1515-1530 BREAK
- 1530-1700 MASSACHUSETTS BAY
Presiding: Winsor Sung
- 1530 W. SUNG and M.S. CONNOR, Harbor Studies Department, MWRA, Boston,
Massachusetts.
RESEARCH, MONITORING, AND MANAGEMENT CONCERNS IN
MASSACHUSETTS BAYS.
- 1540 J. CURA, Menzie-Cura & Associates, Inc., Chelmsford, Massachusetts.
REVIEW OF HISTORICAL PHYTOPLANKTON DATA AND AN
ANALYSIS OF MASSACHUSETTS BAY TO EXHIBIT EUTROPHIC
CHARACTERISTICS DUE TO THE MWRA OUTFALL.
- 1550 G.B. GARDNER, Environmental Science Program, University of Massachusetts at
Boston, Boston, Massachusetts.
PHYSICAL OCEANOGRAPHIC OBSERVATIONS OBTAINED FROM THE
MASSACHUSETTS BAYS PROGRAM.
- 1605 D.W. TOWNSEND, L.M. CAMMEN, J.P. CHRISTENSEN, S.G. ACKELSON,
M.D. KELLER, E.M. HAUGEN, S. CORWIN, W.K. BELLOWS, and
J.F. BROWN, Bigelow Laboratory for Ocean Sciences, West Boothbay
Harbor, Maine, and A. PARTRIDGE, in a pear tree.
SURVEY RESULTS ON THE BIOLOGICAL OCEANOGRAPHY OF
MASSACHUSETTS BAY.
- 1620 E.M. HAUGEN, W.K. BELLOWS, and M.D. KELLER, Bigelow Laboratory for
Ocean Sciences, West Boothbay Harbor, Maine.
SEASONAL VARIATIONS IN PHYTOPLANKTON POPULATIONS AND
PRODUCTIVITY IN MASSACHUSETTS BAY.
- 1635 B.A. KEAFER and D.M. ANDERSON, Biology Department, Woods Hole
Oceanographic Institution, Woods Hole, Massachusetts.
TOXIC ALGAE IN MASSACHUSETTS BAY: IN SITU GROWTH OR
ADVECTION?
- 1650 A. STODDARD, Creative Enterprises of Northern Virginia, Inc., Hamilton, Virginia.
and J.R. PAGENKOPF and M.R. MORTON, Tetra Tech, Inc., Fairfax, Virginia.
A NUMERICAL MODEL OF EUTROPHICATION AND NUTRIENT
ENRICHMENT IN PECONIC BAY.

SESSION III: Translation of Science into Action

- 1700-1720 G. HEUFELDER, Barnstable County Health Dept., Barnstable, MA and S. L.
MACFARLANE, Town of Orleans (MA) Conservation Commission.
CAN WE SAVE THE BAYS? A PRACTICAL APPROACH.
- 1720-1740 JOHN KLEIN, National Oceanic and Atmospheric Administration
NOAA's NEW EUTROPHICATION PROGRAM
- 1740-1810 Discussion (audience and panel participation).

1900-2200 NEERS Registration, The Patio at the Greenhouse Inn

1900-???? Beer Blast - same place

Public debate. Resolved: The earth is an oblate spheroid.
Affirmative, Rick Orson: negative, Linda Deegan.

Special event! A pair of track shoes and a 30 second head start will be awarded to the narrator of the best Anne Griblin story.

Friday. 26 October

0530 Reveille and calisthenics

0800-1200 NEERS Registration, Lobby, The Greenhouse Inn

NEERS SESSIONS, Conference Room, The Greenhouse Inn
K = Ketchum Prize candidate

0825 Welcome: DEAN ROBERT A. DUCE, Graduate School of Oceanography, University of Rhode Island

NEERS Session I
Presiding: Veronica M. Berounsky, Graduate School of Oceanography, University of Rhode Island

0830 A.E. GIBLIN, C. HOPKINSON, J. TUCKER, and G.T. BANTA, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, Massachusetts. BENTHIC NUTRIENT MINERALIZATION AND OXYGEN UPTAKE ALONG A TRANSECT FROM BOSTON HARBOR TO MASSACHUSETTS BAY.

0850 C.N. FARRIS, Marine Ecosystems Research Laboratory, Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island. BENTHIC NUTRIENT FLUX RATES ACROSS A SALINITY GRADIENT IN A MESOCOSM.

0910 T.C. LODER and S. BECKER, EOS, University of New Hampshire, Durham, New Hampshire. STUDIES TOWARDS A BUDGET FOR NUTRIENTS AND SUSPENDED MATTER FOR MASSACHUSETTS BAYS.

0930 J. BOUCHER, Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island. SORPTION BEHAVIOR OF PHOSPHORUS IN THE TAUNTON RIVER ESTUARY (MA).

0950 DAVID A. PHINNEY, Bigelow Laboratory for Ocean Sciences, West Boothbay Harbor, Maine, and CHARLES S. YENTSCH, Center for Remote Sensing, Boston University, Boston, Massachusetts and Bigelow Laboratory for Ocean Sciences, West Boothbay Harbor, Maine. MONITORING WATER QUALITY IN BOSTON HARBOR/MASSACHUSETTS BAY BY REMOTELY SENSED OCEAN COLOR.

1010-1030 BREAK

- 1031 HEIDI M. HOVEN, Department of Plant Biology, and FREDERICK T. SHORT.
K Department of Natural Resources and Jackson Estuarine Laboratory,
University of New Hampshire, Durham, New Hampshire.
TEMPORAL VERTICAL DISTRIBUTION PATTERNS OF JUVENILE
MYTILUS EDULIS ON ZOSTERA MARINA.
- 1050 M.J. DADSWELL and G.J. PARSONS, Department of Biology, Acadia
University, Wolfville, Nova Scotia.
LARGE SCALE EXPERIMENTS ON THE AQUACULTURE OF SEA
SCALLOPS.
- 1110 M.J. DADSWELL and G.J. PARSONS, Department of Biology, Acadia
University, Wolfville, Nova Scotia.
HYDRODYNAMICS AND SWIMMING OF SEA SCALLOPS.
- 1130 S. THORNTON-WHITEHOUSE, Graduate School of Oceanography, University
K of Rhode Island, Narragansett, Rhode Island.
PREDATION AND DISTURBANCE OF BENTHIC MACROFAUNA BY
CRANGON SEPTEMSPINOSA.
- 1150-1300 "DINNER" (Referred to as "lunch" by flatlanders).
On the Patio at the Greenhouse Inn
- POSTER SESSION
A.R. MICHELSON, C.E. WOODCOCK, and C.S. YENTSCH, Center for
Remote Sensing, Boston University, Boston, Massachusetts.
ANALYSIS OF THE SPATIAL AND TEMPORAL VARIABILITY OF
PRIMARY PRODUCTION IN THE BOSTON HARBOR, MASSACHUSETTS
AND CAPE COD BAYS.
- NEERS Session II
Presiding: H.Perry Jeffries, Graduate School of Oceanography
University of Rhode Island
- 1300 JAMES T. MAUGHAN, Metcalf and Eddy, Woburn, Massachusetts, and PETER H.
DOERING and CANDACE A. OVIATT, Graduate School of Oceanography,
University of Rhode Island, Kingston, Rhode Island. INCORPORATION OF
FRESHLY PRODUCED ¹⁴C LABELED PHYTOPLANKTON BY MARINE
MACROBENTHOS IN RELATION TO FEEDING MODE.
- 1320 S. GOSLEE, M. BERMAN, A.M. LOTT, R.S. WARREN, and W.A. NIERING,
Department of Botany, Connecticut College, New London, Connecticut.
ENVIRONMENTAL FACTORS AND VEGETATION CHANGE AT THE
WEQUETEQUOCK-PAWCATUCK TIDAL MARSHES. STONINGTON,
CONNECTICUT.
- 1340 M. RECCHIA, K.MURPHY, M. PECK, and P.E. FELL, Department of Zoology.
Connecticut College, New London, Connecticut.
SNAIL POPULATIONS ON A RESTORED TIDAL MARSH IN
EASTERN CONNECTICUT.
- 1400 M.J. DZIERZESKI, Department of Earth Sciences and Institute for the
K Study of Earth Oceans and Space, University of New Hampshire.
Durham, New Hampshire.
VEGETATIVE CHANGES IN A HYDROLOGICALLY ALTERED SALT
MARSH ECOSYSTEM.

1420-1440 BREAK

1440 H. GEYER and L. DEEGAN, Marine Biological Laboratory, Woods Hole, Massachusetts, and J. FINN and S. AYVAZIAN, University of Massachusetts, Amherst, Massachusetts.
RESPONSE OF AN EELGRASS ECOSYSTEM TO MACROALGAL REMOVAL: PLANTS AND DISSOLVED OXYGEN.

1500 L. DEEGAN and H. GEYER, Marine Biological Laboratory, Woods Hole, Massachusetts, and J. FINN and S. AYVAZIAN. University of Massachusetts, Amherst, Massachusetts.
RESPONSE OF AN EELGRASS ECOSYSTEM TO MACROALGAL REMOVAL: FISH NURSERY HABITAT.

1520 T. HRUBY, B. KOLB, T. SMAYDA, and B. HOWES, Camp, Dresser, & McKee, Inc.
MODELING THE EFFECTS OF NUTRIENT ADDITION ON THE EUTROPHICATION POTENTIAL IN NEW BEDFORD HARBOR.

1540 P.W. BAILLIE and R.S. DESANTO, Marine & Freshwater Research Service, Guilford, Connecticut, and DeLeuw, Cather & Co., East Hartford, Connecticut.
EFFECTS OF JOINING A FLOODED QUARRY TO THE CONNECTICUT RIVER ESTUARY.

1600-1603 **BUSINESS MEETING**, Conference Room
Reports! Constitutional changes! Election of officers! Deposition of Queen Anne; crowning of King David. Coups d'etat! (See Peter Larsen for scheduling these; we don't like to run more than one at a time.)

1603-1900 A time for quiet meditation on the events of the day, and contemplation of what is to come.

1900 BANQUET (a big supper), Conference Room, The Greenhouse Inn, followed by awards, announcements, commendations, and finally by contra dancing on the Cliff Walk.

Saturday, 27 October

0600 Mandatory breakfast for all new members.

NEERS Session III

Presiding: Walter J. Berry, Science Applications International Corporation.
Narragansett, RI

- 0900 M.S. CONNOR, Harbor Studies Department, Massachusetts Water Resources Authority, Boston, Massachusetts.
BOSTON HARBOR REPORT CARD: MAKING MONITORING DATA USEFUL.
- 0920 S.M. YARISH, Project Oceanology, Avery Point, Groton, Connecticut.
HYPOXIA IN THE THAMES RIVER ESTUARY: PRELIMINARY REPORT.
- 0940 ROBERT M. BURGESS (1), GEORGE MORRISON (2), and GLEN THURSBY (1) (1) Science Applications International Corporation, c/o U.S. EPA, Environmental Research Laboratory, Narragansett, Rhode Island, and (2) U.S. EPA, Environmental Research Laboratory, Narragansett, Rhode Island.
FEASIBILITY OF USING ESTUARINE SPECIES FOR ASSESSING THE SUBLETHAL TOXICITY OF SEDIMENTS.
- 1000 R.A. VOYER, U.S. EPA, Narragansett, Rhode Island.
EFFECT OF SALINITY ON CHRONIC TOXICITY OF CD TO MYSIDOPSIS BAHIA
- 1020 BREAK
- 1040 L.T. SPENCER, Natural Science Department, Plymouth State College, Plymouth, New Hampshire.
MARINE RESEARCH IN THE PEOPLE'S REPUBLIC OF CHINA, OR HOW I GREW TO LIKE RICE AND FISH HEADS.
- 1100 K. TODD and R.N. BUCHSBAUM, Massachusetts Audubon Society, Gloucester, Massachusetts, D. PORTER, Department of Botany, University of Georgia, Athens, Georgia, and F. SHORT, Jackson Estuarine Laboratory, University of New Hampshire, Durham, New Hampshire.
EFFECT OF EELGRASS EXTRACTS AND PHENOLIC COMPOUNDS ON THE GROWTH OF LABYRINTHULA ZOSTERAE.
- 1120 SHERRY POUCHER and DON. C. MILLER, Science Applications International Corp. and U.S. EPA, Narragansett, Rhode Island.
EFFECTS OF REDUCED OXYGEN ON AMERICAN LOBSTER LARVAE.
- 1140 C.R. RYDER, LA. DEEGAN, and J.T. FINN, Department of Forestry and Wildlife. University of Massachusetts, Amherst, Massachusetts, and Marine Biological Laboratory, Ecosystems Center, Woods Hole, Massachusetts.
DEVELOPING A (sic) INDEX OF BIOTIC INTEGRITY (IBI) FOR A SOUTHERN NEW ENGLAND ESTUARY: POSSIBILITIES AND PROBLEMS.
- 1200 DENOUEMENT