

NEERS NEWS



URI Scientist Receives Research Award from National Park Service

Narragansett, RI--August 28, 2001--Charles Roman, a research scientist with the U.S. Geological Survey (USGS) located at the University of Rhode Island's Graduate School of Oceanography (GSO), will receive the 2000 Director's Award for Natural Resource Research from the National Park Service. The award will be presented at a ceremony in Florida in October.

Roman has been involved in scientific research on the ecology of coastal ecosystems on behalf of the National Park Service's coastal parks for more than 15 years. His research, an essential component in protecting coastal barrier national seashores, includes restoring salt marshes and small estuaries, monitoring changes in coastal ecosystem structure, function and process, evaluating relationships between sea level rise and salt marsh habitat structure, and evaluating freshwater wetland ecosystems.

"Dr. Roman has training courses and workshops for resource managers, park managers, and park interpreters to assist the National Park Service in preservation efforts," said Mary Foley, Chief Scientist for the National Park

Service Northeast Region. "His innovative approaches to predicting and quantifying ecological restoration responses have benefited park resources. In addition, he has been instrumental in uniting the strengths of the academic community with the strengths of the resource management professionals. He is creative and has inspired much research interest in national parks among the scientific community."

"Our coastal national parks are very special places," said Roman, "and I am fortunate to have the opportunity to study these areas. It is especially rewarding to know that the National Park Service applies much of my research toward understanding, protecting, and restoring their coastal habitats."

"It is wonderful to receive this award," added Roman, "which points to my research accomplishments, but this award also recognizes the excellent work of my graduate students and many research colleagues at URI."

Roman earned a B.S. in resource development from the University of Rhode Island, an M.A. in botany from Connecticut College, and a Ph.D. in marine studies from the Uni-

versity of Delaware. He serves on editorial boards for several professional journals and on several executive committees, including the New England Estuarine Research Society. He is the author of more than sixty articles and reports pertaining to his research on coastal ecosystems and has coedited a book on estuaries. He lives in East Greenwich.

Roman heads up the USGS Coastal Field Station at URI which conducts scientific research on coastal National Parks and National Wildlife Refuges with the objective of applying research findings to the protection of natural resources and development of effective natural resource management policies. Since 1989, URI researchers and graduate students have collaborated with USGS and National Park Service scientists stationed at URI to conduct research at a number of sites, including Acadia National Park, Cape Cod, Fire Island and Assateague Island National Seashores, Gateway National Recreation Area, Rachel Carson, Sachuest Point and Prime Hook National Wildlife Refuges, and many other Department of the Interior coastal units.

NEERS Symposium on *The Use of Bioindicators to Assess the Health of New England Coastal Habitats.*

NEERS held a special symposium entitled *The Use of Bioindicators to Assess the Health of New England Coastal Habitats* on Thursday, May 31st in conjunction with its spring 2001 scientific meeting. It was a lively, stimulating event, punctuated with lots of strong, divergent opinions. Central to the

discussion was whether one could adequately define the term "ecosystem health" scientifically and provide metrics that adequately reflect, not only extreme conditions (pristine and totally degraded) but also points in the middle (e.g., moderate degradation). The speakers and the dis-

cussion covered a variety of coastal habitats and approaches.

Matt Schweisberg from EPA kicked off the symposium by outlining how EPA is beginning to rely more and more on

(Continued on Page Five)

Things to think about

- 2001 ERF meeting in Tampa, Florida.
- New NEERS president makes her mark at Spring meeting.
- Should NEERS constitute a new honor--The NEERS KING and QUEEN of the dance floor?

Message from your President

Greetings,

The spring meeting at Salem was the quintessential NEERS meeting - great science, many easy opportunities for discussion and a reminder that some of the nicest people work in estuaries. The student presentations (talks and posters) were among the best and the competition was stiff. I am glad I don't have to compete against today's students for an award much less a job!

For those of you who wondered if your days of winning awards were over until you retired - the answer is a resounding, possibly not! I have used my extensive powers as President to establish a new award, the Graying Gracefully Award, otherwise known as the "GG" Award (said with a French accent - a beer at the next meeting for anyone who gets the joke.) This award, which is bestowed at the discretion of the President, is for an established scientist who makes a special effort in the content and delivery of a NEERS Presentation (poster or oral). The prize is the Dr. Seuss book "You are only old once." This book will be inscribed with the name of the awardee and passed on to the next winner. In a unanimous decision, the inaugural awardee is (drum roll please) . . . Dr. Scott Warren (Connecticut College) for his thought provoking presentation during the Thursday Bioindicator

Symposium. Not only was his presentation wonderfully done, but he also reminded us that work done years ago is relevant today and his coverage of the concepts of ecosystem health and integrity stimulated some heated discussion. We shall see if anyone steps up to the 'Graying Gracefully' challenge at the next NEERS meeting. I also had the pleasure of signing Honorary Membership certificates for Dr. Ernie Ruber (Northeastern University) and Sandy Macfarland (Chatham) which were presented at the awards banquet (Details elsewhere.) Bestowing these memberships had special meaning for me as Dr. Ruber introduced me to NEERS and over the years Sandy has shown me how a NEERS member makes a difference in the world. After the banquet, the amazing ability of NEERS members to find the perfect place to dance was displayed. The recommended place wouldn't let some of the younger NEERS members in, so we fanned out looking for a new spot, and converged on the same outdoor café. Other NEERS members drifted in over time. A local band was as-

tounded to have such an enthusiastic audience. Ron Rozas made the astute observation that the past-past President (Fred Short) left in the first group to depart at midnight, the past-President (Scott Warren) followed shortly after, while the current President stayed till closing. We assume that the next NEERS President was someone in the group that went looking for an 'after hours' bar!

As is usual for the spirited members of NEERS we have willing volunteers for the Spring and Fall meetings in 2002. We will move a bit 'Downeast' in Spring 2002 to Maine under the leadership of Hilary Neckles and then travel south in Fall 2002 to the new University of Connecticut Marine Science Building under the able guidance of Pat Kremer. If you have suggestions for special Thursday sessions please contact the meeting organizers. Our Fall 2001 meeting will of course be in conjunction with the Estuarine Research Federation Meeting (Tampa Bay, Fl; Nov 4th - 8th).

I look forward to seeing you at these meetings.

Regards,
Linda Deegan

Message from the editor

If this newsletter is a bit late, it is because I have learned first hand that the aphorism "don't put off for tomorrow what you should be doing today". I started building a house in 1971 and got about two-thirds done. I ran out of energy, desire and money. Now, 29+ years later, we

have bought another house and I am in the process of getting the first ready for sale. Unfortunately, more than a third of the work has to be done, as having lived in the house for that many years, much of what was done needs to be repaired.

Well, I know you don't want to hear about my problems,

but I now know what a 24/7 job is like.

This issue is a full issue. Many thanks to Robert Buschbaum for his article on the Bioindicators workshop. Hope someone will keep notes on the Tampa meeting and send them to me.

Larry

Call for Nominations - The NEERS Achievement Award

The Awards Committee is asking the membership to nominate candidates for the

NEERS ACHIEVEMENT AWARD.

This award was established to recognize people who "have made significant contributions over a period of years to estuarine science, education, conservation, or management"; recipients need not be members of NEERS. This award was approved at the Fall 1998 meeting and it was first

presented to Scott Nixon at the Spring 2000 meeting in Portland, Maine. Additional information on this award can be found on the NEERS web site.

Nominations should include a cover letter describing the candidate's contributions to estuarine science, education, conservation, or management. Material detailing the record and significance of the candidate's work are welcome in support of nominations. The Award Committee will keep nominations confidential. It is hoped that the award

can be presented at our Spring 2002 meeting.

Please send nominations to the Award Committee Chair:

R. Scott Warren
Box 5362 Connecticut
College
270 Mohegan Avenue
New London, CT
06320

or via email to:

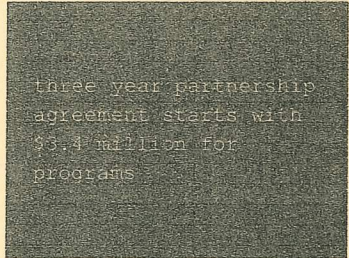
rswar@conncoll.edu

Estuary Restoration Programs to Receive \$3.4 Million

From the Gulf of Maine to the San Francisco Bay, thirteen marine estuaries will soon receive funding for restoration efforts. The private conservation group Restore America's Estuaries (RAE) received the funding as part of the Community Based Restoration Program of the Restoration Center of the National Oceanic and Atmospheric Administration (NOAA).

The three year partnership agreement starts with \$3.4 million for programs this year from NOAA and RAE member organizations, with similar levels of funding expected over the next two years. RAE member groups will use funding to launch a variety of restoration projects such as the installation of fishways, salt marsh and oyster reef restoration, installation

of new tide gates and the creation of salmon habitat. Other projects include exotic plant removal, marsh creation, revegetation and reconstruction of Barrier islands, installation of stream-side forest buffers, shoreline Stabilization and creek clean ups.



three year partnership agreement starts with \$3.4 million for programs

Vista Nieve—A new book

One of our founding members, Mel Carriker has recently published the above volume and I am looking forward to receiving my copy.

Vista Nieve was the name given to the coffee plantation established in the jungles of Columbia by Mel's parents and

the Flies. His father not only worked the plantation, but made a significant contribution to the Carnegie Museum and the National Museum of Natural History by collecting birds for those institutions.

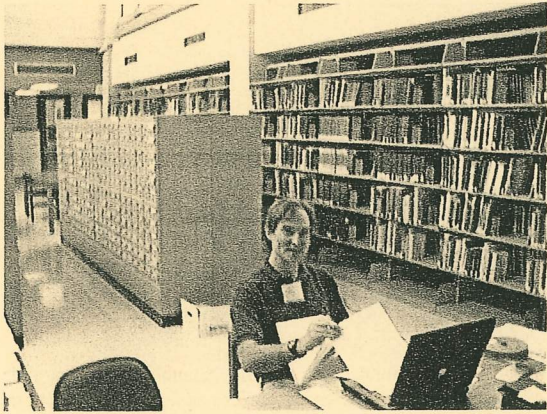
Mel was born in Santa Marta, Columbia and lived the first 12

years of his life on the plantation.

The book has been published by Blue Mantle Publishing, 36901 Marshall Hutts Road, Rio Hondo, TX 78583 (956) 748-4350

www.bluemantle.net

Some Salem Photos



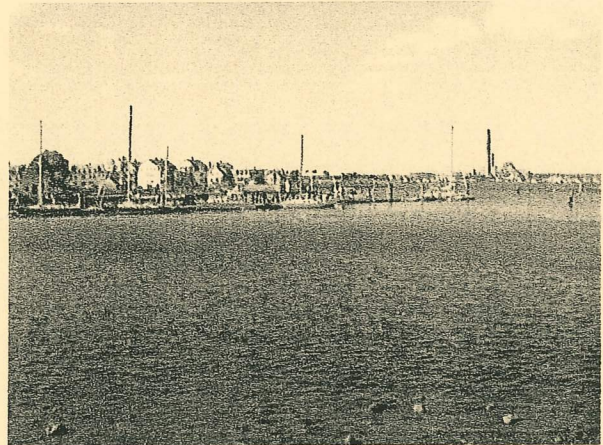
David Checking to see who's coming



Paul Fell deep in thought.



Some Salemites give Sheldon Pratt the low down on lobster prices.



Salem Harbor



Who is this woman and why is she smiling?



Executive Board makes some deep decisions.

NEERS Symposium on *The Use of Bioindicators to Assess the Health of New England Coastal Habitats.*

bioindicators to assess compliance with the Clean Water Act and to get a better sense of the overall condition of wetland resources. Regional working groups, such as the New England Biological Assessment of Wetlands Working Group (NEBAWWG) that Matt heads, have made progress exploring regional biological indicators and are setting up wetland biomonitoring strategies. Cathy Wigand, also from EPA, then described some studies she has carried out in the Narragansett Bay region relating salt marsh plant species composition and denitrification potential to salt marsh health.

The next three speakers described studies on eelgrass habitats. Fred Short talked about a nitrogen pollution index for eelgrass developed by him and his co-workers at the University of New Hampshire. It is based on the ratio of leaf nitrogen content to leaf mass per unit leaf area and was successfully field tested along a nutrient gradient in Great Bay. The ratio is sensitive and unambiguous enough to provide an early indicator of nutrient stress in eelgrass. Jeff Hughes of the Woods Hole Marine Biological Laboratory followed with a description and an application of the Estuarine Biotic Integrity Index that Linda Deegan has developed using eelgrass fish communities. This index uses eight metrics based on either biomass or numbers. The index was highly correlated with eelgrass decline and eutrophication in southern New England estuaries, but revealed a time lag when water quality improved. It needed recalibration before it was useful in assessing estuarine conditions in another bioregion, Chesapeake Bay, pointing to the local nature of various metrics. Phil Colarusso of EPA summarized previous discussions on indicators of eelgrass health from his annual New England Eelgrass Meeting held this past February. Some of the issues included whether an indicator of eelgrass health was also an indicator of overall estuarine health, how to deal with the incredible variability in marine habitats, and whether a definition of eelgrass health would help or hurt protection efforts.

Joe Costa of the Buzzards Bay Project, National Estuary Program, has been exploring indicators of eutrophication that are based on nitrogen loading. Joe has concluded that the most useful predictor of eutrophication and eelgrass abundance is the total maximum annual nitrogen load derived from land use analysis. Local hydrological conditions modify the effects of nutrient load and therefore may complicate management decisions.

Ken Keay reported on the Massachusetts Water Resources Authority's soft-bottom benthic community monitoring program. The

approach involves using community metrics as well as indicator species. Nine years of monitoring of Boston Harbor indicates that species richness increases with improved water quality. Another approach using the same data involves the use of specific indicator species.

All the above papers addressed the use of bioindicators in relation to water quality issues. The presence of invasive species may indicate poor "ecosystem health" even when water quality is not an issue. Judy Pederson of MIT SeaGrant discussed a recent rapid assessment she coordinated to identify marine invasive species in harbors in Massachusetts. Approximately 10% of the species identified so far by 12 taxonomic experts are non native and another 10% are of unknown "cryptogenic" origin.

Three papers that focused on salt marshes presented contrasting perspectives. Scott Warren and Paul Fell of Connecticut College presented a thought-provoking paper that reviewed some of the past notions on indicators of health in salt marshes. The concept of health can be considered one of human attributing functional values to habitats. Although some marsh parameters adequately reflect specific functions such as bird habitat, others do not. It will be very challenging to determine a suite of characteristics that provide for a general assessment since many salt marsh characteristics are apparently unrelated, e.g., plant productivity and diversity of various animal groups. The paper by Jan Smith of the Massachusetts Bays Program, National Estuary Program, and Bruce Carlisle of Massachusetts Coastal Zone Management described a multimetric approach to assessing salt marsh health. They found differences in their bioindicator scores between marshes that were presumed degraded by tidal restrictions and reference marshes. Finally, Michelle Dionne of the Wells National Estuarine Research Reserve discussed the efficacy of estuarine fish as indicators of coastal habitat function. As large, easily identifiable organisms, fish can be used to track long term changes in salt marshes and other estuarine habitats.

The formal presentations were followed by a lively panel discussion. The panelists were Michelle Dionne, Judy Pederson, Matt Schweisberg, and Scott Warren. Strong, divergent opinions were expressed by the panelists and NEERS members in the audience, with no apparent consensus being reached.

Robert Buchsbaum, the moderator, kicked off the discussion by presenting some general themes gleaned from the presentations.

- In terms of ecosystem health or integrity, it is usually easy to discern the extremes, but it is

challenging to find sets of indicators that enable one to distinguish among systems that fall somewhere in the middle.

- What we mean by the term, ecosystem health, is not always clear and not universally accepted as a valid concept.
- Different types of habitats differ in the ease in which "health" can be defined and in which realistic indicators of health can be found.
- It is relatively easier to relate changes in a single stressor or parameter to some individual environmental effect than to relate multiple stressors to a broad concept like ecosystem change or health. On the other hand, one parameter may not tell us much about how the whole system is functioning.
- Some combination of community-based metrics and indicator species might be useful in assessing overall ecosystem "health."
- Indices of health or integrity may not be easily applied to other systems or ecoregions.

The concept of "ecosystem health" came under scrutiny by the panel and the audience. Some expressed the view that ecosystem health is a reflection of human values and conveys a message to the public and to regulators about the status of an ecosystem. The notion of health may make the most sense in relation to ecosystem change over time. Others questioned the use of "ecosystem health" saying that the term confuses the public and has no scientific validity.

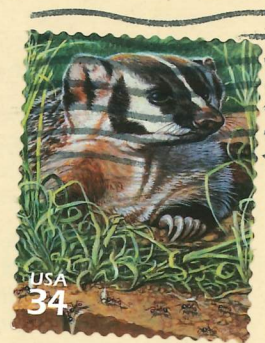
Another controversial issue concerned the testing and predictive value of indices. The question was raised about what statistical standard should be used to indicate that an index is related to overall environmental condition. As an example, an r^2 value of 0.75 may show a statistical relationship but may have a limited predictive value. The use of an index may be akin to risk assessment, in which an indicator works most, but not all, of the time rather than being always predictive.

In theory, most of those present favored a multimetric approach as having the greatest potential for providing meaningful information about the quality of the habitat. On the other hand some scientists who have been working on developing such metrics expressed a certain level of frustration that the indices were not easily developed or clearly related to ecological concepts e.g., trophic structure of fish communities. Matt Schweisberg had the last word, urging people to look into some of the freshwater literature where many of these issues have already been addressed.

New England Estuarine Research Society

Larry T. Spencer, Editor
Natural Science Department
Plymouth State College
Plymouth, NH 03264

Phone: 603-535-2322
Fax: 603-535-2723
Email: ltsp@plymouth.edu



WE'RE ON THE WEB AT
WWW.NEERS.ORG



We now live in 24/7 world, but what about the trilobites in the Cambrian world. Did they have more or less time on their hands (chelipeds)?

ERF Biennial Meeting In Tampa

The 16th Biennial Internal Conference on estuarine research will be held in Tampa, Florida, 4 to 8 November, 2001. The meeting is entitled, "An Estuarine Odyssey".

Thematic sessions will include:

- Detecting estuarine change
- Measuring estuarine health
- Temperate/tropical comparisons
- Marine restoration/conservation
- Essential fish habitat: new perspectives on habitat use and trophic interactions
- Combining science and management to solve estuarine problems
- Technological advances: applications to estuarine

science

- Modeling estuarine processes
- Ecological impacts of invasive species and disease

The Conference Chair is:

Mark Luther, College of Marine Science, University of South Florida,
luther@marine.usf.edu;
727-553-1528

Go to the ERF homepage for more details on the meeting.

[Http://www.erf.org](http://www.erf.org)

NEERS Spring Meeting

We've reserved May 9-11, 2002, at the Atlantic Oakes conference center in Bar Harbor for the NEERS spring meeting. The Atlantic Oakes is right on the water -- if you're familiar with the area, it's situated between the ferry terminal and College of the Atlantic about a mile north of downtown Bar Harbor. The planning for this meeting is ongoing, but at the moment we're exploring walking over to the College of the Atlantic for the Friday night social events. COA is a small liberal arts college with a strong focus on natural resources, which by location means coastal issues. In addition, David Manski (chief of resource management at Acadia National Park) is checking with his band about doing a post-banquet contra dance for us. Then the Park will do a field trip Saturday afternoon, hopefully a boat tour of Somes Sound. Lodging costs are \$69 per night for 1-2 people, \$10 each additional person. Meeting planning is being coordinated by Hilary Neckles (hilary_neckles@usgs.gov) and Blaine Kopp (bkopp@usgs.gov).