The Nauplius

www.seneme.org

Volume XX Number 2

Winter 2009

Letter from the President

I am very excited to be able to write my first letter as the President of SENEME. First, I will get the usual information out of the way. I am presently a Marine Biology teacher at Greenwich High School where I teach juniors and seniors. Prior to being a high school teacher, I worked in the informal marine education field. I have been on the SENEME Board since 2003, and I am the overall computer handyperson also known as the webmaster. I have really big shoes to fill as our Past-President, Lauren Rader, has done such a fabulous job leading SENEME for the past couple years. I will do my best to continue to make SENEME a great organization.

Last year was an exciting year for SENEME as we celebrated our 25th Anniversary. We had many exciting events for members including conferences and lectures about all different marine topics. Welcome to our 26th year. This year, we are going to continue our SENEME events - stay tuned. Check your e-mail for listserv announcements and www.seneme.org for all our upcoming events.

Ocean literacy is always relevant for us in SENEME. We have focused many of our past issues on the important topic of ocean literacy and continue to address that as one of our main features in this issue.

This year, another important concept we should discuss in our classroom is the Polar Regions. I think it is important to have a heightened awareness of the polar habitat, because sea ice in certain areas is at its lowest recorded numbers, and polar bears have become endangered. Right now, there are many resources to use with your students to make them more aware of this important habitat and the amazing organisms that live there. I mention this because it has been the International Polar Years from March 2007 to March 2009. This international program was created as a coordinated research and education program to study the Polar Regions. There is one website that contains all of the data collected during this period. I have also gathered a few resources on the polar habitat, which are listed later in this newsletter. Making students more aware of this important region of our planet is something we should all do this year.

Have a great winter!

Jenna Carlson

In this Edition:

Nauplius Notations

By Donna Dione, Editor

Well, it seems I didn't stay "retired" for long as I'm back on board as the Newsletter Editor. Due to an unforeseen increase in work obligations, Kristen Andrews wasn't able to continue as the Editor. However, I would like to thank her for all the effort she put into the fall issue and for refreshing the newsletter with a new look.

I'm not sure how many of you noticed with the fall issue, but if you look at the header on the front page, you will notice we are in our 20th year of publishing "The Nauplius." So for the Spring/Summer issue, I am hoping to include a little newsletter nostalgia, but I need some help from our long-time SENEME members. If anyone has any information they would like to share with me about the SENEME newsletter prior to 1992 (the first year from which I have newsletters), I would greatly appreciate it. Please send any tidbits to me at dmrdione@quixnet.net.

SENEME Organizational Members

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Thank you for your support!!

SENEME LIFE MEMBERS

2002 Find Pedersen
2003 Mickey Weiss
2004 Thaxter Tewksbury
2005 Ralph Yulo
2006 Elizabeth Gibbs

MARINE EDUCATOR OF THE YEAR

2005 Lance Arnold
2006 Matt Schardt

Ocean Literacy Essential Principles and Fundamental Concepts:

Ocean Literacy is an understanding of the ocean's influence on you and your influence on the ocean.

Compiled by Diana Payne, Education Coordinator, Connecticut Sea Grant

Note: This is the final iteration in a seven part series highlighting the seven essential principles of ocean literacy. You can find out more at www.coexploration.org/oceanliteracy

Essential Principle #7: The ocean is largely unexplored.

Fundamental Concepts:

a. The ocean is the last and largest unexplored place on Earth --- Less than 5% of it has been explored. This is the great frontier for the next generation's explorers and researchers, where they will find great opportunities for inquiry and investigation.
b. Understanding the ocean is more than a matter of curiosity. Exploration, inquiry and study are required to better understand ocean systems and processes.
c. Over the last forty years, use of ocean resources has increased significantly; therefore the future sustainability of ocean resources depends on our understanding of those resources and their potential and limitations.
d. New technologies, sensors and tools are expanding our ability to explore the ocean. Ocean scientists are relying more and more on satellites, drifters, buoys, sub-sea observations and unmanned submersibles.
e. Use of mathematical models is now an essential part of ocean sciences. Models help us understand the complexity of the ocean and of its interaction with Earth's climate. They process observations and help describe the interactions among systems.
f. Ocean exploration is truly interdisciplinary. It requires close collaboration among biologists, chemists, climatologists, computer programmers, engineers, geologists, meteorologists, and physicists, and new ways of thinking.

Web Sites recommended by the BRIDGE www.vims.edu/bridge/:

Age of Exploration
The Mariners' Museum's curriculum guide with teaching activities that address maritime discoveries from ancient times to Captain Cook's 1768 voyage to the South Pacific. One of four online expeditions. Age of Exploration curriculum includes lesson plans, vocabulary, links to related sites, reference material, video, biographies of famous explorers, and more. Lessons include latitude and longitude, creating a compass, an astrolabe, and a globe, identifying the parts of a ship, plus 7 more.
http://www.mariner.org/educationalad/ageofex/

COSEE Mid-Atlantic Coastal Observing Systems Center
The information collected from sensors, buoys, satellites, autonomous ocean-going vehicles, gliders, and land-based instruments is sent via telemetry to a data manager that relays it out over the Internet where scientists, resource managers, educators, students and the public can view and use it. This site describes the major components of ocean observing systems and provides additional observing resources, including international and Mid-Atlantic-specific observatories.
http://www.cosee-ma.net/public/observ.htm

Dive and Discover
Join Woods Hole Oceanographic Institution scientists on research cruises to mid-ocean ridges, hydrothermal vents, seamounts and more. Virtual expeditions include: objectives, background, daily updates, scientist interviews, slide shows and video clips, activities and glossary. Fact sheets with interactive graphics cover deep ocean circulation, oceanography's history, ice ages, plate tectonics, oceanographic research tools and vent biology. The teacher section provides classroom integration tips, class activities, assignments and projects, extensions and resource links.
http://www.divediscover.whoi.edu/

Please see *Ocean Literacy..., Diana Payne* on page 4

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NOAA Ocean Explorer
Follow ocean explorations in near real-time, learn about ocean exploration technologies, observe remote marine flora and fauna in the multimedia gallery, review NOAA's 200-year history of ocean exploration, and discover additional NOAA resources in a virtual library. View current expeditions or take a look back at the archived ones. Most expeditions feature fact sheets, photographs, explorer logs, and ask an explorer.
http://oceanexplorer.noaa.gov/

NOAA Ocean Explorer Lesson Plans
Access to over 160 lesson plans developed by scientists and educators during NOAA's 2001-2004 Ocean Explorer field seasons. Search by grade level, geographical region, subject, specific expedition, or keyword. Lessons correspond with a NOAA exploration, can be supplemented with daily mission logs, images and video. They include: Learning Objectives, Background Information, Evaluations, Extensions, Resources, Student Handouts, and more. Incorporated in "Learning Ocean Science through Ocean Exploration" curriculum. Links to professional development opportunities.
http://oceanexplorer.noaa.gov/edu/lessonplans/lessonplans.html

Online Expeditions – University of Delaware
On-line Expeditions explores the ocean depths by introducing deep-sea research with interactive features, photos, audio and video clips and middle/high school classroom participation. The topics covered include deep sea geology and hydrothermal vents; history of deep-sea exploration and technology; hydrography and chemical oceanography; marine life and more. Teachers can access a resource guide and activities.
http://www.ocean.udel.edu/expeditions/index.html

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International Polar Years March 2007-March 2009
Useful Websites and Resources

Bridge: Ocean Education Teacher Resource Center – Polar Environment
http://www2.vims.edu/bridge/search/bridge1output_menu.cfm?q=polar

International Polar Year Data and Information Service
http://ipydis.org/

National Science Foundation Office of Polar Programs
http://www.nsf.gov/dir/index.jsp?org=OPP

National Science Teachers Association Science Teacher Magazine
January 2009 Issue: *Polar Science and the International Polar Year*

NOAA Arctic Research Program
http://www.arctic.noaa.gov/aro/

The Arctic Environment in Historical Perspective
http://www.arctic.noaa.gov/aro/ipy-1/index.htm

U.S. Geological Survey
http://international.usgs.gov.ipy

Woods Hole Oceanographic Institution
http://polardiscovery.whoi.edu

Ocean Literacy Essential Principles and Fundamental Concepts
A Personal View of the Seventh Essential Principle of Ocean Literacy

By Lance Arnold

Essential Principle # 7: *The ocean is largely unexplored.*

Fundamental Concepts:

a. The ocean is the last and largest unexplored place on Earth--- Less than 5% of it has been explored. This is the great frontier for the next generation's explorers and researchers, where they will find great opportunities for inquiry and investigation.

One of my favorite data bits is that of "mean sphere depth." The mean sphere depth is 2440 meters deep. This mind-boggling concept tells us that if we took all the ocean water away and leveled all the land and then put all the water back on the leveled Earth, the Earth's water would be on top of the land to a depth of 2440 meters.

We live on the 29% of the low density crust that is pushed above sea level by tectonic plate movement. The volume of the world ocean water around us is 1.37×10^9 km^3.

Let your students play with this huge volume. Sometimes, "putting the zeros back" makes the concept more real for them.

First, ask students to convert 10^9 to the number of decimal places we move to the right. (nine places) Then ask, "How many zeros do we have to add to the 1.37?" (seven) Demonstrate this on the board as you go.

Now show students a cubic meter that you have made out of cardboard and ask them, "How many of these are there in one cubic kilometer?" (1,000,000,000) Yes…one billion! O.K., so now ask, "How many zeros do we add to the 1370000000 km^3 that we have on the board?" (The answer is more impressive if you write the 1370000000000000000 m^3 on the board in such a way that it takes up the <u>whole</u> board. I mark the board with very tiny dots to aid me.)

Maybe challenge students to figure out if they stacked the cubic meters of water up towards the moon…"Could you swim to the moon?" [The answer is "yes!" as the moon's average distance away is only 384,400 km. "How about the sun…?" "How about Pluto…?" "How about the orbital distance of Pluto around the sun…!?"]

b. Understanding the ocean is more than a matter of curiosity. Exploration, inquiry and study are required to better understand ocean systems and processes.

We are coming to realize, perhaps too late, that our understanding of the world ocean may be, literally, vital. Ocean systems and processes such as climate change are only minimally understood and our lack of knowledge makes preparation for major impacts problematic. One need only read the huge range of predictions for both <u>what</u> will happen and <u>when</u> it will happen to feel uncomfortable and threatened in our ignorance.

One major concern is that most of the major ocean institutes are in the northern hemisphere but most of the ocean (two thirds) is in the southern hemisphere. Most funding, historically, has been for "local" studies in the northern oceans with little support for exploration of the southern oceans.

For students who express that "everything has already been discovered," have them locate a latitude and longitude that you've chosen at some distant spot in the South Pacific and ask them what is known about the water column there and the associated organisms. When they say "we don't know" return with "at the present time none of us really know." Then ask, "Could knowing ever be important?" "When?"

Have students check out the work of Craig Venter of genome fame on his around the world sampling expedition as a way to show how much remains to be discovered and how little we know.
<u>http://www.jcvi.org/cms/research/projects/gos/overview/</u>

Please see *Ocean Literacy…, Lance Arnold* on page 6

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c. Over the last forty years, use of ocean resources has increased significantly; therefore the future sustainability of ocean resources depends on our understanding of those resources and their potential and limitations.

Our development of food catching technology has been far, far ahead of our understanding of the marine life cycles and the migration patterns of our prey. Our catch rate surpasses our good understanding of species sustainability.

Also, we have the problem of the by-catch rate.

By-catch has always been an afterthought. We keep trying to retrofit shrimp nets with turtle excluders and retrofit lobster pots with iron hog rings. (Hog rings rust away in six months or so and then a large vent drops open on the side of the lobster trap so that a lost trap does not become a permanent death trap.) Still, even with our minimal efforts, tons and tons of by-catch are returned injured or dead back into the sea like sad, wasteful afterthoughts. (Check out http://en.wikipedia.org/wiki/By-catch)

d. New technologies, sensors and tools are expanding our ability to explore the ocean. Ocean scientists are relying more and more on satellites, drifters, buoys, sub-sea observations and unmanned submersibles.

Sensational new sensors now aid our own senses.

It seems like everyday we hear of new technological innovations allowing us to better understand our world ocean and its organisms, but I am reminded of the fable of the six blind men describing an elephant based on the small area each feels. (One blind man said "It is like a snake!" feeling just the trunk, etc.)

Our small sampling of our vast world ocean, especially of our southern ocean, leaves us hopeful but vulnerable. Hopeful that new tools applied judiciously and rapidly may give us new insights and understandings in time but vulnerable to our general ignorance in a so rapidly changing world.

One of the new "tools" to get scientific information is biological.

The Southern Elephant Seals as Ocean Samplers program uses the wonderful southern elephant seals as sampling devices. Since 80% of an elephant seal's life is spent swimming in the huge southern ocean and diving as deep as 6,600 feet, its annual journey of over 8,000 miles makes it an ideal vehicle for sampling. Affixed with satellite tags, the seals report on sea ice formation, temperature, salinity and current activity for large areas of the southern ocean. This includes sampling during the southern winter months and the notorious weather of those months. Their swimming patterns cover a huge area and provide very important data about climate change, etc. See more at http://www.earthdive.com/site/news/newsdetail.asp?changedate=true&changeyear=2008&id=2675 or in the November 2008, National Geographic.

e. Use of mathematical models is now an essential part of ocean sciences. Models help us understand the complexity of the ocean and of its interaction with Earth's climate. They process observations and help describe the interactions among systems.

Computer modeling, with its important forecasting capability, works best with huge data sets and long term time-series. That is, you need lots and lots of facts, and you need them over a long period of time so that trends and recurrences become visible. The world's oceanographic expertise and resources must be pooled globally and scientists from underdeveloped countries, particularly in our southern hemisphere, must be invited and trained to be the data and time-series sources for a global understanding.

Have students visit http://bats.bios.edu/ and report on **the** longest running ocean time-series that was started in 1954 by what is now the Bermuda Institute of Ocean Sciences, BIOS. Or, they could visit a Hawaiian time-series at http://hahana.soest.hawaii.edu/hot/hot_jgofs.html. In either case, have students explore the site and describe the time-series purpose and importance and one "neat fact."

Please see *Ocean Literacy…, Lance Arnold* on page 9

SENEME Members in Action!

Thanks to Katrina Barrett for taking the photos and Jenna Carlson for major help with the photo transfer for this layout.

Top Left: SENEME 25th Anniversary Cake.

Middle Left: Diane Adams shows off her horseshoe crab pumpkin carving.

Bottom left: Denise Grudzinski-Bouchard with her seaweed print creation.

Above: Back by popular demand: Thaxter Tewksbury returns as SENEME's Auctioneer.

SENEME Fall Conference & 25th Anniversary Celebration

Top Left: SENEME members enjoying snacks and exhibits.

Middle Left: Bacon Academy Band and Chorus provided wonderful entertainment.

Bottom left: Bacon Academy Band members perform.

Above: Joe Hage bids at the SENEME Auction sporting high marine fashion.

Continued from *Ocean Literacy…, Lance Arnold* on page 6

f. Ocean exploration is truly interdisciplinary. It requires close collaboration among biologists, chemists, climatologists, computer programmers, engineers, geologists, meteorologists, and physicists, and new ways of thinking.

This year, the Nippon Foundation-POGO program (POGO = Partnership for the Observation of the Global Ocean), has funded an ambitious and timely project to advance international networking in ocean sciences. It has a two-fold approach.

One, establish a visiting professor program to send senior scientists to research institutes in developing countries for extended periods of time. Participating scholars in those countries are then given advanced instruction in marine science and data collection.

Two, select marine scientists from developing countries to receive one year's training and mentoring at a single site in company with some students from developed countries. The BIOS (Bermuda Institute of Ocean Sciences) was chosen as the site, and its goals for the program are to expand the world-wide capacity to observe the oceans, to build human resources in developing countries, and to improve international networking. Young scientists, trained together, will form a peer group that will become the leaders of the next generation of the global oceanic community.

Max Planck, the German physicist, said, "A scientist is happy, not in resting on his attainments, but in the steady acquisition of fresh knowledge."

On this rapidly changing Earth, we cannot afford the luxury of "resting on our attainments." Fresh knowledge from many sources is needed to have the better understanding of our oceans necessary for the long-term welfare of all humankind.

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New York State Marine Educators Association's

Annual Conference at Southampton

"Estuaries: Sustaining the Sea"

Save the Date - June 5, 6 & 7, 2009

Visit www.nysmea.org for conference updates.

Has your SENEME Membership Expired? Check your mailing label, and if your membership has expired or soon will, please consider renewing using the form later in this newsletter. Thank you!

Bulletin Board

Mystic Aquarium & Institute for Exploration

Mystic Aquarium Teacher E-Newsletter
Mystic Aquarium & Institute for Exploration is pleased to announce the arrival of a monthly educator e-newsletter. Each newsletter will focus on a specific marine theme and will include information and activity ideas to bring into your classroom as well as keep you up-to-date on the latest educational programs and teacher workshops at the Aquarium. To register to receive this monthly e-mail, just send a message including your contact information to educationinfo@mysticaquarium.org.

Mystic Aquarium Summer Camps
Do your students or kids love learning about marine science? Sign them up for a Mystic Aquarium Summer Camp! Young explorers, art enthusiasts, soccer players, nature lovers and budding marine biologists will all find a camp to suit their interests at Mystic Aquarium. Occurring June through August, the camps offer hands-on activities, up close animal encounters, field trips and other fun and educational experiences for children ages 2 to 16. All programs require advanced registration. For details and reservation information, visit our website www.mysticaquarium.org, call the reservations department at 860-572-5955 ext 520, or email reservations@mysticaquarium.org.

Mystic Aquarium Teacher Professional Development Workshops
All programs require advanced registration. For details and reservation information, visit our website www.mysticaquarium.org, call the reservations department at 860-572-5955 ext 520, or email reservations@mysticaquarium.org.

DOLPHINS ARE HERE!
Thursday, March 26, 2009, 9:00 am - 12:00 pm
Cost: $20
Appropriate for teachers of all grade levels
CEU's are available
Dolphins are back at the Mystic Aquarium, but only for a limited time, so don't miss this special workshop opportunity! Through discussion and hands-on activities, participants will focus on the biology and behavior of these charismatic marine mammals. Learn about dolphin anatomy and physiology, how large marine mammals are transported between facilities, and how aquarium trainers work with these animals to develop captivating show behaviors.

TEACHING SCIENCE AT THE SHORE
Saturday, April 18, 2009, 11:00 am - 2:00 pm
Cost: $20
Appropriate for teachers of all grade levels
CEU's are available
Gain the knowledge and confidence to lead a coastal field study on your own! Join us as we investigate the rocky shores and golden marshes of Hammonasset State Park in Madison, CT. Get to know the flora and fauna that live in these marine habitats, while participating in population studies and samplings. This is a perfect way to share the wonder, history and importance of Long Island Sound with your students.

OCEAN INQUIRY
Thursday, May 7, 2009, 9:00 am - 3:00 pm
Cost: $30
Appropriate for teachers of all grade levels
CEU's are available
World Ocean Day is June 8! Prepare to celebrate World Ocean Day and your personal connection to the sea. Learn how to incorporate inquiry and the study of the oceans into your curriculum using scientific research. This workshop is aligned with science frameworks and standards and is in collaboration with CT Sea Grant. You'll take home numerous marine resources for immediate use in your classroom. Bring your own lunch or purchase lunch at the Aquarium Café. A special raffle prize will be offered at the end of the workshop.

Bulletin Board

University of Rhode Island

Oceanography Explorers Day Camp 2009
Looking for that special summer camp experience for your children? Youngsters who are entering grades 6-8 this fall can participate in a unique and fun opportunity to learn oceanography this summer. Each fun-filled day includes a field trip to a coastal area to learn the basics of oceanography. Children will examine marine life from microscopic to macroscopic and experience a trip aboard a coastal research vessel.

Camp 1: July 13 – 17, 2009, 9 am – 3 pm
Camp 2: August 3 - 7, 2009, 9 am – 3 pm

Where: URI Narragansett Bay Campus (details of where to drop off and pick up your child will be provided with the confirmation letter).

Fee: $335 per child (includes camp t-shirt, all classroom and lab materials, field trip charges, and daily transportation to field trip sites). Bring a lunch, beverage, and snack each day, and always dress for the weather.

Registration: To register, call the Office of Marine Programs, 401-874-6211. Your child's space is reserved as soon as payment is received.

Connecticut Outdoor and Environmental Education Association

COEEA Annual Conference – Sustainability Education for the 21st Century
Date: March 19, 2009
Time: 9:00 am – 4:00 pm
Site: Central Connecticut State University, New Britain, CT
Visit www.coeea.org for the online conference brochure and registration information.

List of Connecticut Nature and Outdoor Centers
Visit www.coeea.org/naturecenters.html for a comprehensive listing of informal education facilities throughout Connecticut.

FIJI - Jean-Michel Cousteau's Ocean Futures Society

with Dr. Richard Murphy
July 11-19, 2009

Marine educators and enthusiasts: Join us in Fiji in the summer of 2009 for an unforgettable field expedition. Focus on how energy drives all ecosystem processes (abiotic and biotic), how biogeochemical dynamics maintain ecosystem productivity, the value of what evolution has produced – biodiversity, and how ecological connections betweens species promote community stability and sustainability. These processes and principles will be related to ecosystems that are more familiar to North American educators – temperate forests, wetlands, kelp beds and coral reefs. Discover Fiji's ecology through active participation in field exploration while cultivating a clear understanding of the relevance marine environments play within human communities. Through this holistic, integrated systems approach, we will develop continuity from the Fiji experience to ecosystems in the educators' home communities.
For registration: www.holbrooktravel.com/cousteau or email Kelly@holbrooktravel.com

Cranston High School-West Wins 2009 Quahog Bowl

By Diana Payne, CT-RI Regional Co-Coordinator, Connecticut Sea Grant

On Saturday, February 7, sixteen teams from Connecticut and Rhode Island participated in the 2009 Quahog Bowl at the University of Connecticut's Avery Point campus in Groton. This is one of twenty-five regional competitions of the National Ocean Sciences Bowl taking place over two weekends in February. Following twelve rounds of exciting competition, Cranston High School-West emerged from the double elimination round ahead of Waterford High School, Plainville High School and Coginchaug Regional (RD #13) High School. Cranston-West will represent the CT-RI region at the national competition in Washington, D.C., April 25-26, 2009.

The National Ocean Sciences Bowl (NOSB) was first held in 1998 in conjunction with the International Year of the Ocean. The competition is intended to increase knowledge of the oceans on the part of high school students, their teachers and parents, as well as to raise the visibility and public understanding of the national investment in ocean-related research. The NOSB web site describes the competition as a round-robin/double-elimination format for teams of high school students; teams consist of four students plus one alternate and a coach. The format involves a timed competition of multiple-choice or short-answer questions within the broad category of the oceans. Questions are drawn from the scientific and technical disciplines used in studying the oceans (physics, chemistry, geology, atmospheric science, biology, etc.) as well as from topics on the contributions of the oceans to national and international economics, history and culture.

For the competition to run smoothly, considerable preparation and support is necessary. More than 100 volunteers are needed to serve as moderators, judges, timekeepers, scorekeepers, and runners. Donations are solicited from all over Connecticut and Rhode Island and include food services, quahog chocolate pops, pens, pencils, bags, mugs, and monetary support. At the conclusion of the competition, awards are presented, coaches receive gift certificates, and items are raffled off to participating team members. Donations for future competitions are always welcome.

The 2010 CT-RI Regional will again be hosted by the Avery Point campus of the University of Connecticut. The event is co-sponsored by Connecticut Sea Grant and Project Oceanology. Additional sponsors have included Mystic Aquarium & Institute for Exploration, Mystic Seaport, the University of Rhode Island Office of Marine Programs, Dominion, and Starbucks. To participate as a coach/team, as a volunteer, or contribute in-kind or monetary donations, please contact Diana Payne at diana.payne@uconn.edu.

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NOAA Offers New Online Media Library Featuring Ocean-Related Photos and Videos

NOAA's Office of National Marine Sanctuaries has launched a new online multimedia library offering public access to thousands of high-resolution, ocean-related photos and videos taken by NOAA scientists, educators, divers and archaeologists.

The **National Marine Sanctuaries Media Library** is a comprehensive database containing a collection of high-quality still images and video footage featuring all 13 national marine sanctuaries and the Papahānaumokuākea Marine National Monument. The database is fully searchable by keyword, category and location, and all the images are tagged with relevant information including resolution and usage rights.

The media library is part of a continuing NOAA effort to enhance public awareness, understanding, and appreciation of the marine environment. It was created to provide a resource for numerous audiences, including students, educators, publishers, conservation organizations and individuals looking for compelling marine-related images.

Name: _____

*Affliation:*_____

School/Business Address: _____
Street

_____
City, State, Zip Code

*Home Address:*_____
Street

_____
City, State, Zip Code

S**end SENEME mailings to: (Please Check One):** _____ Home Address _____Work Address

Home Phone: _____ *Work Phone:* _____

*E-mail Address:*_____

Are you a member of the SENEME Listserv? YES/NO
If NO would you like to become a member of the SENEME Listserv? YES/NO
Would you like to be a member of the SENEME Newsletter Listserv? YES/NO

Membership Category (Please Check One):

_____ Active Member (1 Year $15)

_____ Active Member (2 Years $25)

_____ Active Member (3 Years $35)

_____ Organizational Memberships (Non-Profits Only $100)

_____ Corporate Membership (1 Year $250)

Total Enclosed: _____
Please return form with checks payable to SENEME.

Mail to: SENEME, c/o Julie P. Ainsworth, 31 Green Springs Dr., Madison, CT 06443

The Nauplius is the newsletter of the Southeastern New England Marine Educators Association Inc. (SENEME) and is published three times per year for members of SENEME. Submissions including (but not limited to) articles, activities to share, student projects, pictures of SENEME members in action, recipes, other organization's announcements and Bulletin Board items are welcome for all issues. The opinions expressed by authors published in this newsletter do not necessarily reflect the views of SENEME and all its Board members. SENEME is not responsible for any typographical errors that may occur within this publication. Permission is granted by SENEME for readers to make copies of newsletter items for their own, non-commercial use.

Please send submissions and suggestions to Donna Dione, 146 Essex Street, Deep River, CT 06417;
e-mail: dmrdione@quixnet.net. Please type articles in a Word format. If mailing media, all disks and pictures will be returned.
Submission Deadline for the Spring/Summer Issue is May 15, 2009.

SENEME
c/o Project Oceanology
1084 Shennecossett Rd.
Avery Point
Groton, CT 06340

DATES TO REMEMBER

April 12-18, 2009 - National Environmental Education Week: Preparing for Earth Day, environmental centers across the US offer programs in the single largest organized environmental education event in the US.

April 22, 2009 – EARTH DAY!!

June 29 – July 3, 2009 – NMEA 2009, Pacific Grove, CA

October 17, 2009 – SENEME Fall Conference and Annual Meeting

July 19 – 23, 2010 – NMEA 2010, Gatlinburg, TN

SAVE THE DATE FOR NMEA 2009!!!

June 29 – July 3, 2009
Asilomar Conference Center
Pacific Grove, CA

NMEA09
One World Conserving
One Ocean

For more information, visit the NMEA 09 One World Conserving One Ocean website at: http://www.nmeaweb.org/. NMEA09 Registration is now open. Register by March 15, 2009 to receive the early bird rate.