

# NOR'EASTER

*Nor'easter* is published twice per annum and is compiled by the Sea Grant programs of the Northeast: Connecticut, Maine/New Hampshire, Massachusetts (MIT and WHOI), New York, and Rhode Island.

Sea Grant is a national program dedicated to the wise use and conservation of marine and Great Lakes resources for the public benefit. Patterned after the successful Land Grant Act of the 1860s, Sea Grant was established in 1966 with passage of the Sea Grant Program and College Act. Funding comes primarily from the U.S. Department of Commerce's National Oceanic and Atmospheric Administration, with matching funds provided by states and private funding sources.

*Please see insert for ordering information.*

## NOR'EASTER, Volume 1, Number 1, Spring 1989

- **Life in the 21st Century: A Sea of Troubles?** *Peg Van Patten, Connecticut Sea Grant*  
Find out what's ahead on global climate warming and sea level rise. .... **N1**
- **The Long Island Sound: A Study in Science. A Study in Civics.** *Avery Klauber, New York Sea Grant, and Peg Van Patten, Connecticut Sea Grant*  
Can a stressed estuary like Long Island Sound recover? How do you convince millions of people to spend billions of dollars to attempt it? ..... **N2**
- **Cashing In on Chitin** *Karen Hartley, MIT Sea Grant*  
Sea Grant research is turning crab shells into surgical sutures, contact lenses, and hair spray. .... **N3**
- **Can Nonscientists Monitor the Environment?** *Carole Jaworski, Rhode Island Sea Grant*  
Volunteer monitoring is an idea whose time has come. But can nonscientists' data be trusted? ..... **N4**
- **"...And All the Waters...Were Turned to Blood"** *Alan W. White, WHOI Sea Grant*  
Red tides are now a global problem affecting fisheries and public health. Here's the latest about red tides in the Northeast. .... **N5**

## NOR'EASTER, Volume 1, Number 2, Fall 1989

- **Our Disappearing Coastline: Losing More Than Just Sand on the Beach** *Avery Klauber, New York Sea Grant*  
Coastal erosion threatens much of our valuable shoreline. What options do we have for protecting our beaches? ..... **N6**
- **Plastics Are Forever** *Lee Anne Campbell, WHOI Sea Grant*  
Discarded plastic items in the ocean are killing marine animals by the thousands, getting caught in boat propellers, and washing up on our beaches. .... **N7**
- **Close Call! The Narragansett Bay Oil Spill** *Carole Jaworski, Rhode Island Sea Grant*  
The Narragansett Bay oil spill offers some surprising lessons on what we know—and don't know—about oil on water. .... **N8**

- **Farming Our Waters** *Peg Van Patten, Connecticut Sea Grant*  
Could seaweed be the crop of the future? Scientists are developing special strains of kelp suitable for commercial production in the Northeast. .... **N9**
- **Deep Thoughts: Artificial Intelligence in Underwater Vehicles** *Carolyn Levi, MIT Sea Grant*  
Researchers are applying artificial intelligence concepts to underwater vehicles—creating what, in essence, will be underwater robots. .... **N10**

## NOR'EASTER, Volume 2, Number 1, Spring 1990

- **For Those in Peril on the Sea: Progress in Commercial Fishing Safety** *Ellen Yoder, Rhode Island Sea Grant*  
Commercial fishermen still flirt with disaster every time they go to sea. But others outside the profession are working to keep them physically—and financially—afloat. .... **N11**
- **Parr for the Course: Raising Superior Salmon in the Northeast** *Kathleen Lignell, Maine/New Hampshire Sea Grant*  
Infectious diseases and the failure of some fish to spawn in captivity are two major headaches plaguing the aquaculture industry. Researchers are applying new technology to help solve both problems. .... **N12**
- **The American-Irish Aquaculture Venture: Hands Across the Water** *Peg Van Patten, Connecticut Sea Grant*  
The United States and Ireland share the same ocean and cultivate many of the same marine species. A new program will allow them to share aquaculture techniques and expertise. .... **N13**
- **The Marine Advisory Service: Making Science User-Friendly** *Avery Klauber, New York Sea Grant*  
Marine Advisory Service specialists from the Northeast Sea Grant programs talk about what they do and how they do it. .... **N14**
- **The Story Behind the New Tidal Inlet at Chatham** *Graham S. Giese, WHOI Sea Grant*  
It was covered by *Time* magazine and the *Washington Post*. Now, find out the full story behind the breaching of this Cape Cod barrier beach in the winter of 1987. .... **N15**



- **In Search of the Perfect Stroke** *Carolyn Levi, MIT Sea Grant*  
The basic shape of competition oars has remained essentially unchanged since the late 1950s. However, competitive rowing is beginning to bend to modern technology. .... **N16**

#### **NOR'EASTER, Volume 2, Number 2, Fall 1990**

- **What Happens Now? Evaluating the Cleanup of Boston Harbor** *Carolyn Levi, MIT Sea Grant*  
A multibillion-dollar cleanup is now under way in Boston Harbor. But dirty sediments may muddy the water for a long time to come. .... **N17**
- **Investigators Hunt for Great Lakes Enemy #1: Zebra Mussels** *Avery Klauber, New York Sea Grant*  
Malevolent mollusks from abroad could cause big problems for the environment and economy of the Great Lakes basin. ... **N18**
- **Collision-tolerant Pile Structures: Slalom Gates for Tugs and Barges** *Steve Adams, Maine/New Hampshire Sea Grant*  
Every year the Coast Guard loses thousands of wooden navigation piles to collisions. An ongoing Sea Grant research project searches for a better way. .... **N19**
- **Harvesting Sea Urchins: A Prickly Business** *Kathleen Lignell, Maine/New Hampshire Sea Grant*  
The soft, tasty innards of the sea urchin demand a high price. But can harvesters consistently deliver a high quality product without depleting the resource? .... **N20**
- **Women in Marine Science...Good Girls Don't?** *Lee Anne Campbell, WHOI Sea Grant*  
It's still unusual to find women in science and technology careers. Successful women scientists and others explore the reasons why. .... **N21**
- **Discovery on Block Island: 2,500-Year-Old Village Predates Agriculture** *Carole Jaworski, Rhode Island Sea Grant*  
Archaeologists are exploring the site of an ancient year-round village with an economy based on marine resources. .... **N22**
- **Can the "Effluent Society" Deal with its Waste?** *Peg Van Patten, Connecticut Sea Grant*  
A billion gallons of sewage effluent are discharged into Long Island Sound every day—resulting in problems that may cost billions of dollars to solve. .... **N23**

#### **NOR'EASTER, Volume 3, Number 1, Spring 1991**

- **Coastal Confrontations: Whose Shore Is It, Anyway?** *Pam Pogue, URI Coastal Resources Center*  
Public access to the shore is a contentious issue in many coastal areas, and solutions are neither clear-cut nor simple. .... **N24**
- **Growing Fish Salad: An Experiment in Integrated Aquaculture** *Carolyn Levi, MIT Sea Grant*  
A recipe for success: Combine resource conservation, sustainable agriculture, fish farming, and on-the-job training for prison inmates. .... **N25**
- **Seafood Quality Assurance: Strategies for the 1990s** *Avery Klauber, New York Sea Grant*  
The public loves seafood, but worries about its wholesomeness. Are the fears justified by the facts? .... **N26**

- **"Science Willing & Politics Permitting": Oceanographic Research in an International Setting** *Judith Fenwick, WHOI*  
Extended maritime claims are constraining research in the world's coastal oceans, but with the headaches may come new opportunities for international collaboration. .... **N27**
- **Lobsters A'Plenty...But Why?** *Susan White, Maine/New Hampshire Sea Grant*  
While other fisheries are in decline, Maine lobsters are plentiful. But the reasons why are a mystery. .... **N28**
- **Seeking a Safer Solution to Biofouling: Boating's Billion-Dollar Burden** *Steve Adams, Maine/New Hampshire Sea Grant*  
Barnacles, seaweeds, and tubeworms that grow on ship hulls create drag, resulting in increased fuel costs. Researchers are hunting for environmentally safe and economically feasible antifoulants. .... **N29**
- **Coastal Habitat Restoration: Can the Damage Be Undone?** *Heather Crawford and Peg Van Patten, Connecticut Sea Grant*  
Restoration ecologists try to prove true the ancient Chinese adage, "What has been spoiled through man's fault can be made good again through man's work." .... **N30**

#### **NOR'EASTER, Volume 3, Number 2, Fall 1991**

- **Nor'plankton** *Carolyn Levi, MIT Sea Grant*  
Many of the ocean's tiniest organisms—the phytoplankton—have never been identified. But with the latest technology, researchers are finally beginning to classify and characterize these minute mysteries of life. .... **N31**
- **Troubled Waters: Taking Stock of the Gulf of Maine** *Lee Anne Campbell, WHOI Sea Grant; Kathleen Lignell, Maine/New Hampshire Sea Grant; and Melissa Waterman, Gulf of Maine Program*  
Increasing pressures from coastal development, competing resource use, and pollution are putting one of the world's most productive ecosystems at risk. Only through coordinated efforts can the Gulf's productivity be sustained for years to come. . **N32**
- **Hurricane Bob** *Carole Jaworski, Rhode Island Sea Grant*  
Chronology and statistics of the first hurricane to strike the Northeast since 1985. .... **N33**
- **Picture This: The GIS Revolution** *Peg Van Patten, Connecticut Sea Grant*  
Map drawing was once painstakingly done by hand. Geographic Information Systems have changed all that, and their potential uses are just being uncovered. .... **N34**
- **Is Rainfall Polluting Our Waters?** *Peter Groffman, University of Rhode Island, and Carole Jaworski, Rhode Island Sea Grant*  
Nitrogen is a major pollutant in coastal waters throughout the world. But only recently have scientists discovered that a significant portion of that pollution is arriving in rainfall. .... **N35**
- **Scientists—The Next Generation** *Avery Klauber, New York Sea Grant*  
Sea Grant-sponsored graduate students discuss why they decided on a career in science, their interests in research, and their plans for the future. .... **N36**
- **Atlantic Salmon Restoration: An Upstream Battle** *Marie Polk, Maine/New Hampshire Sea Grant*  
With the completion of major dams by the mid-1800s, the



# NOR'EASTER

Woods Hole Oceanographic Institution Sea Grant Program

1. Circle the appropriate publication number(s) below:

N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11
N12	N13	N14	N15	N16	N17	N18	N19	N20	N21	N22
N23	N24	N25	N26	N27	N28	N29	N30	N31	N32	N33
N34	N35	N36	N37	N38	N39	N40	N41	N42	N43	N44
N45	N46	N47	N48	N49	N50	N51	N52	N53	N54	N55
N56	N57	N58	N59	N60	N61	N62	N63	N64	N65	N66
N67	N68	N69	N70	N71	N72	N73	N74	N75		

2. Prepare a check or money order—made payable to WHOI—for the appropriate amount (\$1.00 per article, plus shipping charges—see box).

3. Complete the following mailing information:

Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip + 4 \_\_\_\_\_

Telephone Number \_\_\_\_\_

3. Mail this order form and your payment to:

Publications  
WHOI Sea Grant Program – MS#2  
193 Oyster Pond Rd., CRL 209  
Woods Hole, MA 02543-1525

Questions? Call WHOI Sea Grant at (508) 289-2398.

**Shipping  
Charges**

1-4 articles .....\$1.50,    5-10 articles ..... \$3.00    11+articles ..... Please call first



Atlantic salmon had all but disappeared from the New England rivers where they once flourished. But because of contemporary restoration projects throughout New England, Atlantic salmon are coming back. .... N37

#### **NOR'EASTER, Volume 4, Number 1, Spring 1992**

- **Coming Soon...To A Water Body Near You: The Tenacious Zebra Mussel** *Avery Klauber, New York Sea Grant*  
This thumbnail-sized mollusk will, in some way, impact the environment of every water body in which it becomes established. .... N38
- **The Fate of Metals in Boston Harbor: An Interview with Gordon Wallace** *Carolyn Levi, MIT Sea Grant*  
What will happen to metal concentrations in Boston Harbor once the sewage outfall is moved nine miles offshore? ..... N39
- **Shellfish Aquaculture: SOS for Threatened Stocks** *Susan White, Maine/New Hampshire Sea Grant*  
Throughout the Northeast, natural shellfish stocks are threatened. The regional response has been an increase in aquaculture. .... N40
- **Ocean Projects Immerse Students in the Sea** *Marie Polk, Maine/New Hampshire Sea Grant*  
For more than 25 years, University of New Hampshire undergraduates have been plunging into research focused on ocean-related needs. .... N41
- **The Falmouth Pond Watchers: A Case Study in Volunteer Monitoring Programs** *Tracey I. Crago, WHOI Sea Grant*  
Learn what volunteers in Falmouth, Mass., and throughout the Northeast are doing about water quality in their areas. .... N42
- **Global Change. What Is It? What Can People Do to Help?** *Carole Jaworski, Rhode Island Sea Grant*  
See the answers to these questions through the eyes of 14 winners of a Rhode Island Sea Grant-sponsored Global Change Poster Contest. .... N43
- **Sea Grant Marine Advisory Service Looks Ahead: MAS-A Thinkpiece** *Norman Bender, Connecticut Sea Grant; David Dow, Maine/New Hampshire Sea Grant; and James Murray, North Carolina Sea Grant*  
Americans face a multitude of changing conditions as they enter the 21st century. What role will Sea Grant's Marine Advisory Service play? ..... N44

#### **NOR'EASTER, Volume 4, Number 2, Fall/Winter 1992**

- **Aliens Among Us** *Peg Van Patten, Connecticut Sea Grant*  
Thousands of alien species have invaded, and continue to invade, the Northeast. .... N45
- **Where Have All the Fish Gone?** *Kenneth Sherman, NOAA National Marine Fisheries Service*  
Overexploitation of fisheries in the Northeast has led to the virtual economic extinction of many fish species. Today, fisheries management has taken a new, more holistic, approach. .... N46
- **Hopes, Hang-Ups & Heroes: Researchers Look at Their Careers and Beyond** *Steve Adams, Maine/New Hampshire Sea Grant*

Sea Grant-sponsored researchers share some of the different facets of their lives. .... N47

- **Nor'reader Survey Results** *Elizabeth Gibbs and Carole Jaworski, Rhode Island Sea Grant*  
The results of the Spring 1992 Nor'easter Reader Survey are in. .... N48
- **Catch & Release** *Avery Klauber, New York Sea Grant*  
Anglers are helping scientists while extending their fishing enjoyment using catch-and-release and tag-and-release techniques. .... N49
- **Preventing Fish Disease in the Northeast** *John T. Singer and Bruce L. Nicholson, University of Maine*  
Development of vaccines represents the best approach to disease-free aquaculture. .... N50
- **Solving Coastal Problems: The Mass Bay Classroom** *Roger Stern, Massachusetts Bay Marine Studies Consortium*  
Classroom events are making working connections between science and local citizens. .... N51
- **Recycling Marine Science** *Tracey I. Crago, WHOI Sea Grant Program, and Lee Anne Campbell, WHOI*  
Education programs form creative linkages with the scientific community to recycle information. .... N52

#### **NOR'EASTER, Volume 5, Number 1, Spring/Summer 1993**

- **Sound in the Sea** *Kathleen Heide, MIT Sea Grant*  
Ocean researchers are using sound to get answers to such diverse questions as how whales communicate, how to better prevent fish disease in farmed fish, how to navigate underwater robots, and how to better understand global climate change. .... N53
- **Sound Management for Long Island Sound** *Peg Van Patten, Connecticut Sea Grant, and Avery Klauber, New York Sea Grant*  
Seven years and \$15 million in the making, the Long Island Sound Study has issued its long-awaited recommendations for conserving and managing this valuable resource. .... N54
- **Getting to Why: Understanding Leukemia in Soft-Shell Clams** *Tracey I. Crago, WHOI Sea Grant*  
Hematopoietic neoplasia—a clam leukemia—has caused soft-shell clam populations to decline over the past few years. Scientists want to know why. .... N55
- **Seafood Perceptions Can Be Deceiving** *Malia Schwartz, Rhode Island Sea Grant*  
Uncertainties about seafood quality and safety have caused consumer concern, while experts continue to profess the healthful benefits of eating seafood. Who is right, and how can consumers learn to judge seafood quality for themselves? .. N56
- **Dealing With Disaster: When Oil Hits the Water** *Steve Adams, Maine/New Hampshire Sea Grant*  
Oil spills can be disastrous. An oil spill management course at the University of New Hampshire is helping to ensure that if an oil spill occurs, those charged with managing it are ready. .. N57



## **NOR'EASTER, Volume 5, Number 2, Fall/Winter 1993**

- **Environmental Stewards: Giving Back and Making a Difference** *Nancy Balcom, Connecticut Sea Grant*  
In grassroots environmental protection, kids, community groups, and other concerned citizens are playing the starring roles. .... **N58**
- **Treasures and Pleasures of the New England Coast** *Carole Jaworski, Rhode Island Sea Grant*  
Rhode Island Sea Grant presents winners of its regional poetry contest. .... **N59**
- **"They" Are the Problem: Assessing Fisheries Management in New England** *Madeleine Hall-Arber, MIT Sea Grant*  
An anthropologist looks at the social influences on, and impacts of, fisheries management. .... **N60**
- **Knauss Fellows Help Shape Marine Policy in the Nation's Capitol** *Julie Zeidner, New York Sea Grant*  
From congressional offices to federal agencies, Sea Grant-sponsored graduate students are making their mark on Washington. .... **N61**
- **Here Today, Gone Tomorrow?** *L. Kenneth Fink, Jr., University of Maine, and Susan White, Maine/New Hampshire Sea Grant*  
Better understanding of barrier beach processes will help improve management of this highly dynamic environment. .... **N62**
- **Marine Biotechnology: Sea Grant's Role** *Tracey I. Crago, WHOI Sea Grant*  
Recent federal funding for biotechnology holds the promise of new discoveries and yields from the sea. .... **N63**

## **NOR'EASTER, Volume 6, Number 1, Spring/Summer 1994**

- **Using Biomarkers to Detect Contamination of the Marine Environment** *Mark E. Hahn, WHOI*  
The possibility that marine pollutants may have harmful effects on marine organisms or humans who eat those organisms is causing much concern. Scientists are now turning to biomarkers to detect contamination in the marine environment. .... **N64**
- **Celebrating the Portable Ocean** *Steve Adams, Maine/New Hampshire Sea Grant*  
Maine/New Hampshire Sea Grant takes a photographic look at a "Day of the Coast Celebration." .... **N65**
- **The Year 2000: Looming Potential for Trouble** *Carole Jaworski, Rhode Island Sea Grant*  
The Earth is already showing signs in its coastal areas that it may not be able to sustain increased demands placed on it by exponential human population growth. .... **N66**
- **A Tale of Two Spheres: The Tiny Bubbles Trapped in the Sea and the Majestic Earth Free in the Void of Space** *Edward C. Monahan, Connecticut Sea Grant*  
What do whitecaps in the sea have to do with global climate change? One scientist continues to gain new insights. .... **N67**
- **Overcoming Pressure—Physiologist Claes Lundgren Continues his Breakthroughs in Underwater Diving** *Julie Zeidner, New York Sea Grant*  
Scuba diving has changed dramatically since physiologist Claes

Lundgren first began diving almost 50 years ago. Take a look at the impact this researcher has had on this popular field. ....

**N68**

- **Bioremediation: Bacteria Get Tough on Pollutants** *Andrea Cohen, MIT Sea Grant*  
New techniques are offering ways to deal with old pollutant problems. .... **N69**

## **NOR'EASTER, Volume 6, Number 1, Fall/Winter 1994**

- **Reeling in Deep-Sea Data With Sound Waves** *Andrea Cohen, MIT Sea Grant*  
Underwater networks of acoustic modems are making deep-sea information-gathering almost as easy as picking up the phone... .... **N70**
- **Salt Marshes: Jewels of the Northeast** *Graham S. Giese and Tracey I. Crago, WHOI Sea Grant*  
In addition to their practical value as buffers against storm-wave damage, salt marshes also offer clues into such phenomena as sea-level rise. What they reveal can direct efforts for restoring and protecting the coastal zone... .... **N71**
- **Mussels & Eelgrass: A Mutual Attachment** *Kathleen Lignell, Maine/New Hampshire Sea Grant*  
The bounty of the blue mussel aquaculture harvest is dependent, in part, on the abundance and health of eelgrass, which provides a refuge for the mussel "seed" collected for culturing... .... **N72**
- **When Shamrocks Meet the Sea** *Peg Van Patten, Connecticut Sea Grant*  
The collaborative Irish-American aquaculture effort not only enhances international technology exchange, but also encourages dialogue across political borders and engenders cooperation between shellfishermen and aquaculturists... .... **N73**
- **Ecotourism: Balancing Environmental and Economic Interests** *Carole Jaworski and Malia Schwartz, Rhode Island Sea Grant*  
This new trend in tourism holds promise for protecting natural resources while achieving sustainable economic development... .... **N74**
- **Unlocking the Many Secrets of Bluefish** *Judith N. Hogan, New York Sea Grant*  
This most popular of sportfishing targets may be declining in numbers. Sea Grant research into bluefish spawning and recruitment dynamics has turned up information that will form the backbone of stock management plans... .... **N75**

**Note:** All issues of *Nor'easter* magazine are available for a 30-day loan from the National Sea Grant Depository. For further information, or to borrow an issue (up to 10 documents may be borrowed per request), contact the National Sea Grant Depository, Pell Library Building, The University of Rhode Island,

Narragansett Bay Campus, Narragansett, RI 02882-1197. Phone: (401) 874-6114; Fax: (401) 874-6160; E-mail: jwinn@gso.sun1.gso.uri.edu.  
Requests by interlibrary loan are also welcome.

