NOAA REPORT

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Ronald Bell/DOC

Administrator D. James Baker (left) congratulates Sea Grant director Ronald Baird on his Presidential Rank Award.

Ronald Baird Receives Presidential Rank Award

—By Jana Goldman

Ronald Baird, director of the National Sea Grant College Program, received a Presidential Rank Award Nov. 2 for his accomplishments in helping position the United States as a world leader in marine research and the sustainable development of coastal resources.

"Throughout his career, Ron has compiled a distinctive record of outstanding accomplishments," said NOAA administrator D. James Baker. "This is a fitting recognition of the work he has done and the major innovations he continues to bring to Sea Grant and NOAA as a whole."

The Presidential Rank Award recognizes a small group of career senior executives. Winners are selected for their ability to deliver great service, foster partnerships and community solutions to achieve results and continuously strive to work efficiently and effectively.

Baird, who was named Sea Grant director in 1996, provided crucial leadership in putting the Sea Grant reauthorization legislation back on track after it stalled in Congress for two years. His efforts resulted in the legislation passing with nearly unanimous support.

Lake Effect Snow Blankets Buffalo

—By Robert Chartuk

Peak season for snow storms to blow in off the Great Lakes is usually not until December. But on Sunday, Nov. 19, Weather Service forecasters in Buffalo, N.Y., could see ominous signs.

Packets of energy were sweeping south, driving Arctic air across the long fetch of a warm Lake Erie. Tons of water would be swept off the lake, forming towering cumulus clouds in a pattern not unlike a thunderstorm.

As it ascended, the moist air would rapidly chill. When the air could no longer carry its wet burden, huge amounts of snow would fall to the ground.

Ground zero for the lake event snowstorm would be Buffalo's metro region.

If weather is a weapon, lake effect snow is a surgical strike.

To a city suffering 90 inches of snow per year, Weather Service storm warnings are just another part of Buffalo's winter's routine.

At first, the weekend storm seemed only an inconvenience, as the snow-savvy city easily absorbed 14 inches. But could Monday afternoon's rush hour handle the city's third heaviest snowfall ever?

Throughout Sunday night and into the next morning, the Buffalo forecast office was buzzing with warning activity.

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Employee Helps Disabled Students Discover High Tech

—By Robert Chartuk

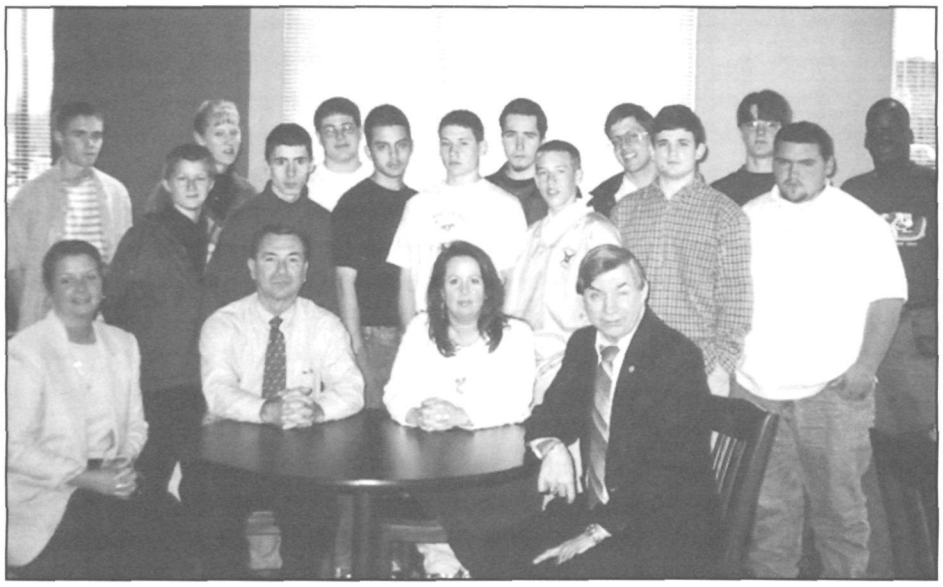
More than two dozen Virginia high schoolers are getting hands-on experience in the world of technology this year as part of High School/High Tech, a special program for disabled students managed by NOAA's John Wright, meteorologist-in-charge of the Blacksburg, Va., Weather Forecast Office.

"High School/High Tech is a community-based partnership of parents, educators, rehabilitation professionals and business representatives," Wright explained. "Its purpose is to encourage students with disabilities to explore the fields of science, engineering and technology."

One of its goals is to introduce the students to high tech companies in hopes they will set self-achievement goals centered around employment in the high tech arena, he said.

Wright, who is the people-with-disabilities coordinator for the Weather Service eastern region, is working to expand the program throughout the National Weather Service. "This hands-on opportunity gives the students a significant advantage as they enter the 21st century workforce," he said.

"High School/High Tech students are highly motivated to learn high tech skills and work very hard with an eye toward careers in science, engineering and technology," said Joseph W. Meredith, president of the Virginia Tech Corporate Research Center. "Many of our 105 companies have opened their doors to High School/High Tech because they know the value these students can bring to the work force."



Joseph W. Meredith

NOAA's John Wright (right front) joins High School/High Tech students and teachers following a recent ice cream social.

The fifteen companies that have participated during the first two years with the students in Montgomery County, Va., include Crop Tech, which conducts research on the production of human medicines using enzymes from tobacco plants, the Virginia Tech Library System, which works with the Library of Congress and the national libraries of over 80 countries throughout the world, the Virginia Tech CAVE Automated Virtual Environment, which explores the area of three dimensional virtual reality, and the National Weather Service office in Blacksburg, according to Wright.

Ellen Lyberg Green, EEO manager at the Weather Service eastern region headquarters, attended a recent meeting between the students and their corporate sponsors. "One of the companies hired interns from Virginia Tech University and a high schooler through High School/High Tech this past summer to help debug computer code," she said. "When the project was complete, it was the High School/High Tech student that was offered a full time position."

Wright, whose forecast office has employed four High School/High Tech students, including one that is still working eight hours a week, said some participants are gearing their college educations toward the fields they were introduced to through the program.

"The students and their parents are quite pleased that these opportunities are available," said Wright, who noted that the program is sponsored by the President's Committee on the Employment of People with Disabilities.

"Florida High School/High Tech has been able to place students at the Weather Service Melbourne office," Wright said. "I'm now reaching out to other NOAA offices to get the program going on a wider scale."

Weather Service headquarters in Silver Spring, Md., also participates in the program.

"There is much to do to help ensure that youth with disabilities are given every opportunity to succeed, thereby increasing the numbers of people with disabilities who are productive members of society in the 21st century," Wright said. "I will continue to help wherever and whenever I can to make that happen."

Michael Henderson/NOAA

(left to right) Lt. Cdr. Michele Bullock, Lt. Alexandra Von Saunder and Lt. Cdr. Stacy Birk-Risheim are the senior officers of the NOAA Ship McArthur.

"We're just doing our jobs."

McArthur's Women Officers Make Maritime History

—By Michael Henderson

Women have been going to sea for quite some time; and women at sea on NOAA ships is nothing new either.

But when you walk aboard the NOAA Ship *McArthur*, it doesn't take long for you to realize that you have stepped into a small piece of maritime history.

The three most senior positions on this research vessel are held by women, a first for NOAA and possibly for the maritime industry as well.

The commanding officer, or CO, of the "Mac" is Lt. Cdr. Michele Bullock. The executive officer, or XO, is Lt. Cdr. Stacy Birk-Risheim. The operations officer, or OPS, is Lt. Alexandra Von Saunder.

Along with third mate Greg Hubner, Ensign Doug Krause and Ensign Nicole Cabana, these six NOAA personnel make up the wardroom of *McArthur*.

"The international maritime community is becoming accustomed to hearing women on radios as deck officers on the bridge. But a female captain is still pretty rare and often causes a pause," says Bullock, who is halfway through her tour as captain.

"*McArthur* has been to several Spanish speaking countries this past year, and the command has been treated professionally and with courtesy at each port. It's funny because there is awkwardness in calling a female 'captain,' which traditionally has a male pronoun," Bullock says.

"There currently is no politically correct translation for a female

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NOAA Volunteers Rescue Sea Birds

—By Chris Smith

Deputy under secretary Scott Gudes took time out from his vacation Nov. 4 to join more than 150 community volunteers to help clear deadly monofilament fishing line from over 60 seabird rookery and colonial wading islands in Tampa Bay.

The program, coordinated by Tampa Bay Watch and the National Audubon Society, was funded in part by bird restoration funds from the 1993 Tampa Bay oil spill settlement.

"I'm delighted to join in this important project along with more than 25 NOAA employees from around Tampa Bay," said Gudes. "It's most appropriate to celebrate NOAA's thirtieth anniversary by working hand-in-hand with my NOAA comrades, our partner agencies and the citizens of the region to help restore this precious ecosystem."

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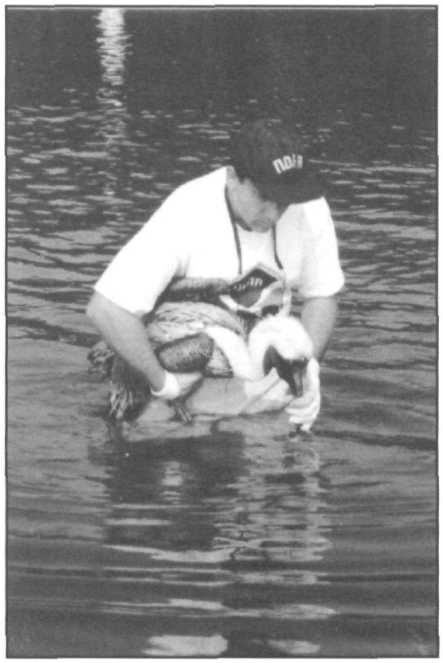
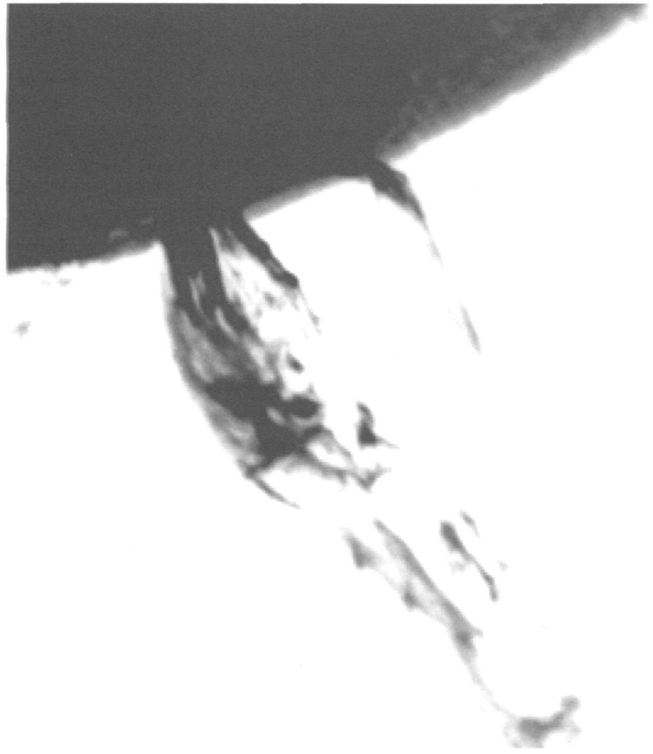


Chris Smith/NOAA

Deputy under secretary Scott Gudes delivers a sick eastern brown pelican to an awaiting rescue boat.

Focus On...



Space Weather

—By Barbara McGehan

On Nov. 23, Thanksgiving night, as the rest of the country was preparing for bed, forecasters at NOAA's Space Environment Center in Boulder, Colo., sat riveted in their seats, watching a huge fireball on the sun explode, ejecting millions of tons of plasma and electrically charged particles towards earth.

Quickly, they began alerting their over 600 customers that a major solar flare was in progress.

During the next several days, six more major flares blasted streams of energetic particles toward earth, as forecasters worked through the weekend.

Does what happens in outer space matter to us? You better believe it!

Every 11 years, the sun swings between periods of high and low activity. It's been doing that for centuries. But never before have there been so many human activities that could be affected by huge eruptions on the sun.

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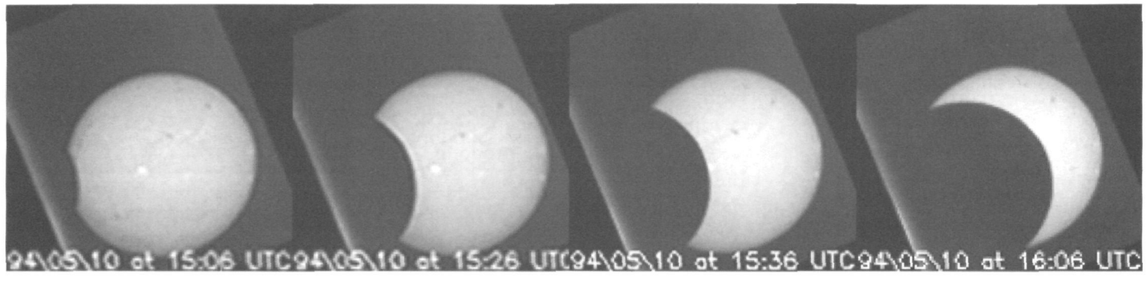
Top: A coronal mass ejection.
Bottom: The solar eclipse of May 10, 1994.
SEC/NOAA



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Outer space has become increasingly cluttered with communications satellites.

We have the global positioning system, and there is now a permanent space station.

With new technologies and high tech businesses on earth, more and more industries are interested in space weather and find that it is in their best interests to keep on top of it.

At the Space Environment Center, forecasters work 24/7/365, observing the sun and making forecasts for the entire nation.

While most of us aren't usually affected by storms in space, we might be more aware if our electricity was suddenly knocked out, or a communications satellite was zapped, affecting our television or computer.

Pilots flying the northern route to Europe or across the pole to China are particularly concerned about receiving excess radiation.

Most of the time, these worst case scenarios don't occur. But several times during the current solar cycle, forecasters expect severe storm conditions that potentially could interfere with systems on earth.

That's where the Space Environment Center comes in. Founded in 1965, the center is the nation's only space weather forecast center, providing forecasts, warnings and alerts to users in government, industry and the military. It is both a research and operational center, part of NOAA's Office of Oceanic and Atmospheric Research and the National Centers for Environmental Prediction.

Wilfred von Dauster/NOAA

Forecaster Larry Combs (left) and technician Court Williamson prepare to issue a space weather advisory.

"It's a unique situation," said senior forecaster Gary Heckman. "It gives the researchers a dose of reality to be working with the forecasters. They can try out their models and get immediate feedback. And it's good for the forecasters to see what the modelers are trying to do."

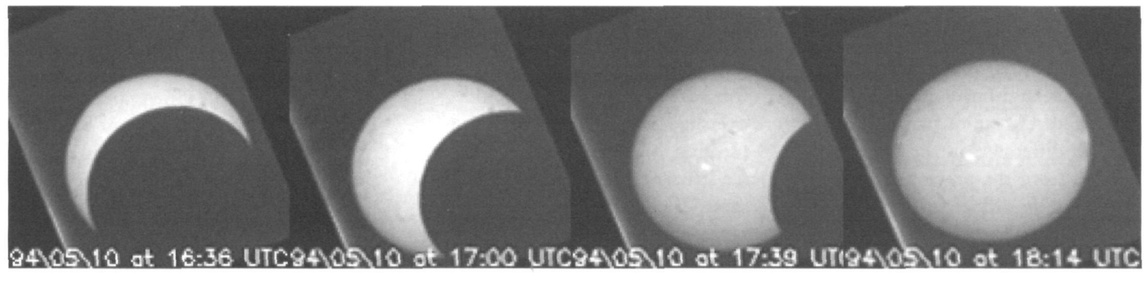
The center is also a partner with the U.S. Air Force.

While there can be some negative effects from solar storms, sky watchers are hoping to see the spectacular effects—the northern lights, or Aurora Borealis.

Usually a result of a solar disturbance, the electrically charged particles from the sun can produce ethereal effects in the nighttime sky, including brilliant blue, green, red and purple auroras.

More often these auroras are seen in Alaska and other polar regions. But when the storm on the sun is strong enough, this phenomenon can be seen in many places in the continental U.S.

"The aurora is just so spectacular," said Joe Hirman, forecast center chief. "It's one of the very few manifestations of severe space weather that we can actually see."



McArthur Women

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captain that is commonly known," Bullock says. "I have been called 'Capitan Muchacha' (little girl Captain), 'el Capitan' and 'el Primer Oficial,' and I think all these names are a real kick. Regardless of what they called me, it was always followed by professionalism and respect," she says.

"We try to be as professional as we possibly can every day," Bullock says. "Our priorities are the safety of the crew and the vessel and the accomplishment of the mission. Having a female command structure is not a big deal to us. It's a team effort with the entire crew and scientific complement cooperating together to get the job done as best we can. The fact that we are women in the senior-most positions is purely coincidental," she says.

Most of the scientists who routinely sail onboard NOAA ships are aware that sooner or later they will sail with one or more women, whether those women are part of the crew or the actual management of the vessel.

"It is interesting and sometimes fun to see their reaction of surprise—sometimes disbelief, raised eyebrows and a smile—when they first learn that the positions of CO, XO and OPS are all held by women," Bullock says.

"But it's a momentary thing, and they might mention it in passing during the cruise. But no one makes a big deal out of it. Nor should they. We're just doing our jobs.

"As for the crew, I am sure there were jokes when it was first realized the ship would have an all female command, but quite frankly I have seen no difference in the way they treat us from the previous male commanding officer or the other male officers. They are a professional group, and if we don't let it get in the way, they won't either," Bullock says.

"I'm with them every day, with some of our cruises lasting 25 to 30 days at a time," says Greg Hubner, a 20-year veteran of NOAA ships. "I consider them shipmates, and I know I can count on them no matter what the mission calls for or what emergency might pop up. They're all professional and do a fine job for NOAA. I think that's all you can ask of anyone, whether a man or a woman."

"Stacy, Alex and I have chatted a few times about how to downplay this sort of story, which could overshadow our efforts of accomplishing NOAA's mission; but so far it hasn't been an issue," Bullock says. "We also realize the importance and responsibility of serving as role models. If we can help some young girl decide that she can make it in the sciences or engineering or just accomplish something she never thought was possible because she was a woman, then it's worth everything!"

At that point, *McArthur's* imminent departure from port interrupts.

"We really have to get going," Bullock says, "but remember to write down that we are proud that it's worked out this way and it's been a great experience.

"I'm very glad and proud to have worked with such fine officers as Alex as my OPS officer and now Stacy as my XO. But I am equally proud of my entire crew and the way we have worked as a team through long field seasons.

"The ship doesn't run with just

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NOAA's 99th Basic Officer Training Class Graduates

Lt. Keith W. Roberts/NOAA

NOAA's new commissioned officers graduated from basic officer training at the U.S. Merchant Marine Academy at Kings Point, N.Y., Nov. 9. Back row (left to right): Ensigns Jason Seifert, Nicholas Chrobak, Roger Eggers, Richard Hester, William Pierce and Erik Eilers. Middle row (left to right): Ensigns Noah Lawrence-Slavas, Jessica Kondel, William Mowitt, Tom Peltzer and Stephen Kroening. Front row (left to right): Ensigns Jennifer Dowling, Jennifer Washburn, Reina Garcia and Jeffrey Taylor.

Buffalo Snow Storm

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Emergency managers were briefed, Buffalo International Airport was standing by and the media were urged to alert their audiences to an impending heavy snow.

On cue, a very localized but powerful snowstorm set up right over the Buffalo forecast office, just north of the airport.

"The storm was violently convective, with lots of thunder and lightning," said meteorologist Tom Niziol, one of the nation's preeminent lake effect snow forecasters. Niziol and other Buffalo forecasters marveled at the lightning popping off like flashbulbs in the snow-muffled clouds. "Thunder shook the ground," he said.

"The snow fell pretty fast—up to four inches an hour—and in about seven hours, a near-record 24.8 inches had piled up," Niziol said.

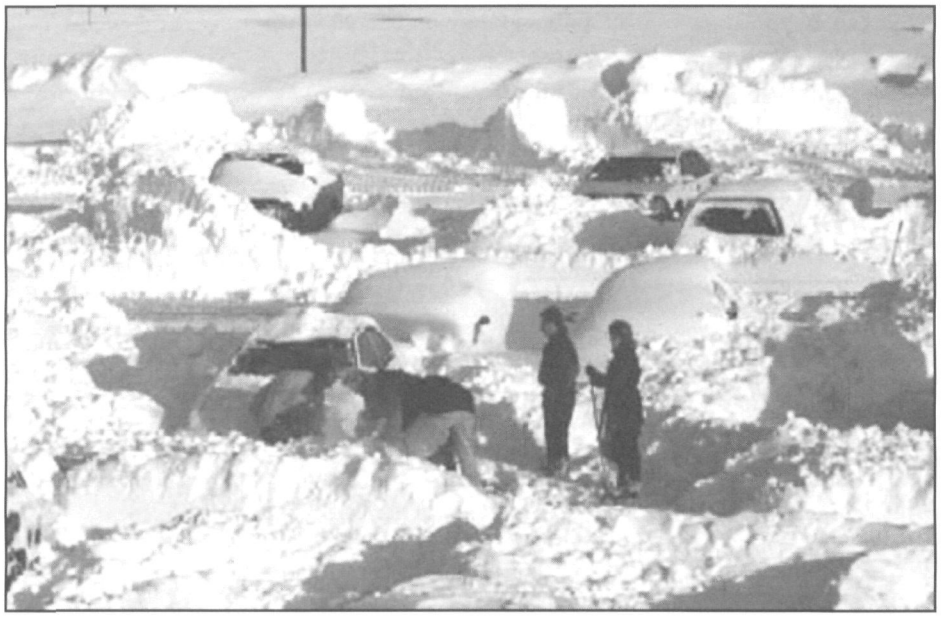
If weather is a weapon, lake effect snow is a surgical strike.

The storm produced heavy snowfall in a swath no more than three to five miles wide, but hammered the region's most populated area, dumping more than a foot of snow on as many as 750,000 people. "The scale of such an event is hard to imagine," Niziol said. "We describe it as a winter-time equivalent of a flash flood—a snow burst."

Buffalo was paralyzed.

"The snow had a large water equivalent and engulfed the city like a wet blanket. Highway crews couldn't keep up with it, even though it was expected," said Guy Tucker, Buffalo's meteorologist-in-charge.

"Of course, a National Weather Service forecast office never closes, and many staff members worked as long as 16 to 24 hours straight," Tucker said. "Some were stranded in the office while others fought their way through the snow-clogged streets to get to work. One forecaster got as close as three miles to the office, but could go no further. So he telephoned to say he would be a few minutes late while he walked the last three miles through deep snow to get in."



Clay Morgan

Buffalo commuters dig out from an early lake effect snow storm.

Another forecaster was literally vectored into the office by cell phone as he worked his way through the maze of clogged streets, Tucker said.

Others recounted how they got out of their vehicles to help stranded motorists move snow-bound cars and clear paths to drive through the heavy snow.

"Communications through the satellite link to the office were never disrupted, only because forecasters trekked out at intervals to sweep the deep snow off the satellite dish," Niziol said. "As the snow let up, it was another team effort to dig out employees' vehicles and get them on their way back home so they could get some sleep and get back for the next night's shift."

The office's service to the city did not go unnoticed.

"Thanks for doing an outstanding job and helping this area get through the storm," said Buffalo TV-WGRZ meteorologist Kevin O'Connell. "The balanced and thoughtful wording of alerts, forecasts and other important weather statements was excellent and achieved the goal of being timely while not being intimidating. Well done...and thanks."

"From a forecaster's point of view," Niziol said, "the Great Lakes Region is one of the best natural laboratories to study the weather. For those meteorologists who work in Buffalo, it makes the job a truly exciting and rewarding experience."

McArthur Women

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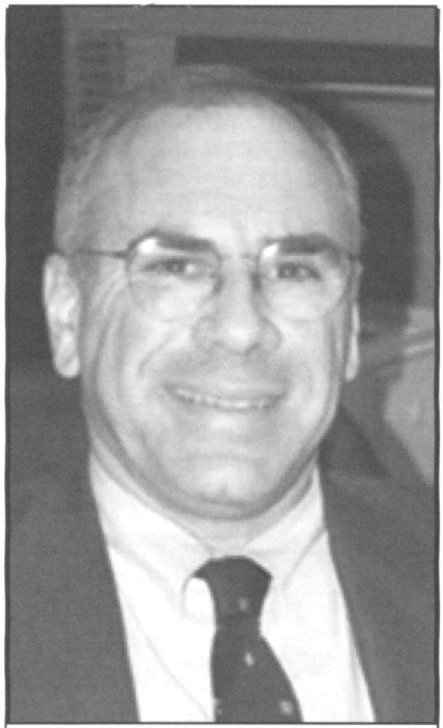
the three of us," Bullock says. "It's just as important to write about the great work *McArthur* as a whole accomplishes for NOAA. I hope that one day the fact that the CO, XO and OPS officers are female will be a small footnote."



Robert Chartuk/NOAA

Dean P. Gulezian.

Dean P. Gulezian is the new director of the National Weather Service eastern region, headquartered on Long Island, N.Y., with responsibility for 30 Weather Service offices in 16 states. Gulezian is a 26-year Weather Service veteran and former meteorologist-in-charge of the forecast office in Detroit.

News Briefs

Kathleen Kelly, who has worked for the National Environmental Satellite, Data, and Information Service since 1975, is the new director of satellite operations in Suitland, Md.

Gary Carter, a 30-year veteran of the National Weather Service, is the new director of the Weather Service Office of Hydrologic Development in Silver Spring, Md.

Sea Bird Rescue

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Personnel from the NOAA Fisheries southeast regional office, NOAA's Office for Law Enforcement and Aircraft Operation's Center, the Tampa Bay area's National Weather Service forecast office, the National Ocean Service Damage Assessment Center and the NMFS Southeast Restoration Center participated in the cleanup.

In August 1993, three ships collided near the entrance of Tampa Bay, spreading oil along 13 miles of beaches in Pinellas County, injuring birds, sea turtles, mangrove habitat and other natural resources in the area.

In April 1999, NOAA, the U.S. Fish and Wildlife Service, Florida's Department of Environmental Protection and the responsible parties agreed to an $8-million settlement for restoring natural resources damaged by the spill.

They agreed to develop and implement a number of specific ecological restoration projects. In addition to the monofilament clean-up, restoration projects include mangrove restoration, salt marsh restoration, bird rehabilitation, sea turtle recovery and sediment and water column restoration.

"Monofilament entanglement is one of the largest causes of mortality to shorebirds, wading birds and seabirds in Tampa Bay," said Peter Clark, director of Tampa Bay Watch, which cosponsored the cleanup with the National Audubon Society.

"Anglers who accidentally hook seabirds while fishing often release the birds by cutting the fishing line, leaving long strands of line attached to the birds," Clark said. "The birds then return to their colonial island, usually mangrove islands, only to become hopelessly entangled in the monofilament line and mangrove trees. The monofilament line remains in the trees to further entangle other birds for decades to come."

"This year's monofilament line cleanup is but one of many important projects that have been completed or will be undertaken using funds from the 1993 oil spill settlement," said John Iliff, habitat restoration manager for the southeast. "The trustees identified mangrove, saltmarsh, oyster reef and water column restoration projects as well as a sea turtle recovery program that are in progress or will soon begin in and around Tampa Bay," he said.

The mangrove restoration project entailed the purchase by the responsible parties of a 10.76-acre parcel on the west bank of Cross Bayou in Pinellas County.

Approximately 7,000 cubic yards of solid waste and upland fill were removed from the site to create 4.8 acres of new mangrove habitat.

The project eliminated invasive exotic vegetation, created new tidal channels to enhance circulation and planted smooth cordgrass to stabilize sediment and accelerate mangrove colonization.

Ownership of the parcel has now been conveyed to Pinellas County for public recreational and conservation uses.

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Address comments to:
Editor, The NOAA Report
1315 East-West Highway
SSMC3, room 10853
Silver Spring, MD 20910
301-713-9042 *(voice)*
301-713-9049 *(fax)*
Email: dane.konop@noaa.gov
NOAA Report Online: *http://www.publicaffairs.noaa.gov/nr*
Barbara Semedo, Director, OPCA
Dane Konop, Editor

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