

Is early spring a sign of climate change?

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What tells you that spring is coming? Seeing robins in the neighborhood? Watching azaleas or dogwood bud and bloom? Watching the caterpillars dangle from live oaks?



Natalie DuBois, from *Defenders of Wildlife*, sent this picture of crocuses in the Washington D.C. area that are showing early.

Phenology is the study of recurring plant and animal life cycle stages, such as leafing and flowering, emergence of insects and bird migration (learn more at the National Phenology Network site, www.usanpn.org). The timing of these events is important for health, recreation, agriculture, management of natural resources, understanding hazards, and conservation. Sometimes, though, the timing is off.

Recently, many observers around Florida and the southeast U.S. noticed some typically spring blooming plants flowering in January, presumably due to extended periods of warmer than usual weather this winter. It's hard to resist photographing beautiful spring flowers, so I set out with my camera and invited my friends across the country to come join me. You can see all the great photos in the "early bloomers" set here: <http://flic.kr/s/aHsjDMMxaC>.

Is this early blooming a sign of climate change? It could be, especially if it becomes a long-term trend, and not just a short-term variation in the weather. Keep watching!



Greg Rawl, a hydrologist from Ft. Myers, Fla. sent this picture of his mango trees that are in flower much earlier than usual.

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A newsletter that highlights Florida Sea Grant extension's response to the ebb and flow of Florida's dynamic coastal communities.

Marty Main named extension director



Martin B. "Marty" Main, creator of the Florida Master Naturalist Program, has been named associate director of education and extension for the Florida Sea Grant College Program, and associate dean of natural resource programs for the Florida Cooperative Extension Service. He officially began on Jan. 1.

"Marty brings the experience and vision that will help carry on Florida Sea Grant's strong tradition for extension and education success," said Karl Havens, Florida Sea Grant director. "Our program is fortunate to add an individual with his remarkable background in the coastal and ocean sciences.

Since 1996, Main has been a professor in UF's department of wildlife ecology and conservation, and he is considered an expert on coyotes in Florida.

Main said he looks forward to shifting his focus from research to extension. "Through the Master Naturalist program, I have known and worked with many Sea Grant and IFAS extension faculty, and I'm enthusiastic about working with them in this new role," he said.

Main holds a doctorate in wildlife science from Oregon State University, a master's degree in biological oceanography from Florida Institute of Technology and an undergraduate degree in biology from Central Michigan University.

Focus groups prepare Escambia County for future storms and sea-level rise

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In the aftermath of Hurricane Sandy, many coastal communities are re-evaluating their readiness for future storms. In Escambia County, as with many other locations in the state, coastal erosion is a major concern and with the changing weather patterns and sea level there is a question about our readiness. Add to this soup the fact that the county is considering a new master plan for beach development. Are decision makers considering the possible hazards of future storms?

The first step to providing education and outreach on this topic was to host a series of focus group meetings with coastal professionals, businesses and residents. With the assistance of UF/IFAS professor **Paul Monaghan** and Florida Sea Grant coastal planning specialist **Thomas Ruppert**, we held four focus group meetings in January. Attendees included utility companies, coastal zone managers, businesses, both the national and state parks in the area, and a county commissioner, as well as several residents from the beach. Monaghan had a series of questions to stimulate group discussion and the talks were very productive. Monaghan's graduate student is currently transcribing the recording tapes. When this is completed the three of us will discuss the results



Robert Turpin

Stakeholders from Perdido Key discuss gaps in information needed to prepare for future storms and sea-level rise.

along with notes we took to provide more specific topics in our programming to meet their needs. Paul Monaghan's method was very useful in this process and I encourage other agents to seek his help and advice when developing new programs.

Cedar Key Everlasting promotes shellfish aquaculture industry

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Florida's modern coastal communities are built upon the state's long and storied saltwater heritage. But the fishing communities that once defined the peninsula have all but disappeared in most of the state. The communities and cultures that have survived are facing a combination of challenges—rapid population growth, degradation of local ecosystems, and marine resource regulations, just to name a few. For most of the 20th century, the island community of Cedar Key remained a small fishing village. However, during the 1990s, increasing regulations affected the livelihoods of its fishing families. A transition to shellfish aquaculture was facilitated through retraining programs in the same decade. Today, clam farming adds an estimated \$45 million a year into the area's economy and supports more than 500 jobs.

In collaboration with the local shellfish growers association, we decided to educate visitors and new residents in an effort to inspire an appreciation for the community's aquaculture and fishing industries, as well as what it takes to sustain them.

A 40-page magazine-style publication *Cedar Key Everlasting* features a series of essays contributed by experts in their fields about the environmental, economic, and sociological benefits of clam farming. The photography of **Eric Zamora** and **Carlton Ward Jr.** with Legacy Institute for Nature and Culture captures the essence of the community in a way that engages readers and helps carry the science-based messages to the broader audiences. The publication ends with recommendations about what one can do to help keep the coastal environment clean.

An interactive flipbook of Cedar Key Everlasting can be viewed at <http://shellfish.ifas.ufl.edu/cedarkeyeverlasting/cedarkeyeverlasting.html>.

To reach the intended audiences, community



This magazine-style publication tells readers about the sustainable benefits of aquaculturing shellfish. View online to experience the community vision of Cedar Key.

by the Florida Humanities Council through the National Endowment for the Humanities assisted in printing the publication.

leaders and businesses were invited to a social and clam bake last year at which time the magazine was debuted. Following this, we have provided local real estate agencies, condominium management firms, hotels, chamber of commerce staff, and others with additional copies. The publication was also distributed during the working waterfronts session of an international aquaculture conference.

Funding provided

Creating manatee stewards

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Human-related threats to endangered manatees include collisions with boats and entanglement in fishing gear. Flagler County is implementing manatee speed zones because of increasing manatee mortalities in the area. Approximately 180 third-grade students at Rymfire Elementary School in Flagler County are learning about manatees this year using an 18-lesson curriculum that I developed along with **Dr. Ruth Francis-Floyd**, an aquatic animal veterinarian at the University of Florida. The curriculum is available at: http://stjohns.ifas.ufl.edu/Sea/3rd_grade_curriculum.html.

As part of the curriculum, we take the students to see manatees at Blue Spring State Park. The students collect data about the number of manatees, the number of those that have scars, and the behaviors that they see the manatees doing. Several schools in northeast Florida have been using the manatee curriculum since 2010.



Many manatees have series of parallel scars caused by boat propellers

In 2011-12, one third-grade class at Rymfire Elementary School designed and conducted a research project to learn more about biodegradable fishing line. The class gave a presentation to the Flagler County Council and entered their project in Disney's Planet Challenge contest (they were state runners-up for Florida). The class also worked with two other classes to build fishing line recycling containers which have been installed at the Flagler Beach fishing pier and Marineland Marina. By learning about manatees and by teaching others in their community about threats to these animals, these students are helping to reduce the dangers to manatees in Flagler County.

Marine fisheries workshop helps educate anglers

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In January 2013 **Bryan Fluech** and I teamed up with Florida Fish and Wildlife Conservation Commission law enforcement to host the fourth annual Southwest Florida Marine Fisheries Regulations Workshop. Florida Sea Grant's **John Stevely** and **Chuck Adams** also contributed their subject matter expertise as guest presenters.

The workshop was intended for park rangers, resource managers, and informal educators who commonly interact with fishermen. The objectives of the workshop were to educate staff about marine fisheries regulations to 1) improve audience's knowledge and understanding of current marine fisheries regulations to help increase their ability to



John Stevely, Manatee and Sarasota counties, talks to workshop attendees about release techniques for fish caught in deep water.

communicate with anglers about these rules, and 2) increase the local network of agency staff capable of identifying and reporting marine fisheries violations.

Workshop topics included a summary of 2012-2013 state and federal regulation changes, the economic importance of fisheries, fisheries management, release techniques for deepwater fish and discussion of local FWC law enforcement activities. Sixty-one participants from four counties attended the workshop.

From Stem to Stern II having long-term impacts

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In 2012, Florida Sea Grant, the Florida Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, and the University of Florida Levin College of Law organized *From Stem to Stern II*, a statewide conference on boating and waterway management in Florida. The conference was attended by 155 coastal and marine stakeholders from around the state. Short-term outcomes from the conference were assessed and reported immediately following the event, but six months later, I surveyed attendees to assess medium-term outcomes for achievement of long-term impacts.

Of the 53 survey respondents nearly three-quarters indicated their work in boating and waterways has directly benefitted as a result of attending the conference, by applying for grants, increasing



collaborative work, better meeting the needs of target audiences, and initiating new programs and/or research projects. In evaluating whether communication among stakeholders increased as a result of attending the conference, 80% of respondents indicated that they had established new partnerships during and after the conference, and 97% of respondents

had contacted their partners since the conference. Examples of increased communication included collaborating on new or ongoing projects, maintaining networking relations with contacts, sharing information with contacts/partners, and obtaining knowledge from local expert or expert in the field.

We anticipated that if stakeholders maintained communication that collaborative work would happen at some point. Survey results reveal that one-third of respondents who have established and maintained relationships with new partners have organized activities/projects in collaboration with them. In determining next steps, 87% of respondents indicated that they would be interested in attending a local/regional workshop before the next conference with topics to include project permitting, marine spatial planning, training opportunities, and strategies to engage decision-makers as a key waterway planning audience.

Finally, 89% of survey respondents indicated that they would attend *From Stem to Stern III*. Potential conference topics suggested by respondents include boating/maritime regulations and administration, comprehensive waterway planning, environmental/habitat considerations, derelict vessels, and marinas.

Clam tours for writers well received

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In January 2013 **Joy Hazell**, Lee County, and I helped the Charlotte Harbor Visitors and Convention Bureau highlight the area's culinary attributes by conducting clam nursery tours for visiting travel writers.

Working in partnership with a local clam farmer, the tours introduced participants to the region's local seafood industry, with a focus on aquaculture. Participants learned how the clam industry is operated including the hatchery process, nursery, grow out, harvest, and processing. Participants then toured the nursery and were treated to a sampling of sunray venus clams at a nearby restaurant.

Through end-of-tour evaluations, we learned that all of participants "strongly agreed" that the program increased their awareness of the region's local seafood industry.

Participants were also asked to complete a consumer evaluation of the sunray venus clams as part of an ongoing University of Florida market research project. Overall results were very favorable with all respondents ranking the Sunray Venus clams good to excellent in appearance, taste, texture and tenderness.



Clam farmer Barry Hurt describes the nutritional qualities of a farm-raised hard clam to tour participants while clam farmer Ray Bauer looks on.

Is there something fishy about your sandwich?

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Have you ever wondered if that grouper sandwich you ordered is really grouper? According to a recent study, your suspicions may be correct—the study found that more than half the fish sold in south Florida is mislabeled. A Florida Sea Grant-funded research project is working to get to the bottom of this fish fraud.

University of South Florida microbiologist **Jon Paul** and **David Fries**, of USF Marine System's Technology Group, have developed a hand-held tool that uses DNA to verify the authenticity of grouper fillets. The tool has many real-world applications for wholesalers, fish markets and restaurants. The grouper industry is big money in Florida! In 2011 over 6.9 million pounds were landed with an estimated dockside value of nearly \$20 million dollars.

In order to introduce the tool to potential end-users, I worked with Dr. Paul and Dr. Fries to facilitate "What's in your Sandwich? A Grouper Authentication Workshop" in St. Petersburg on Dec. 5, 2012. The workshop was well attended by restaurant owners, fisheries managers, food critics, and private industry.

Robert Ulrich, a Sea Grant-funded Ph.D. candidate, guided the group through hands-on laboratory training, data analysis, and interpretation. The group found the hands-on training to be a very useful component of the workshop. Participant feedback helped to identify strengths and weakness of the device and its applicability in the industry.



An innovative hand-held tool identifies the DNA sequence of grouper fillets, verifying its authenticity.

Bay scallop larvae released in Lemon Bay and Gasparilla Sound

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For the last several years, I have been working on a variety of bay scallop monitoring projects. The goal has been to get a good idea of our local conditions—population status, current distribution and target areas for restoration effort. All of these efforts recently led to the implementation of a targeted restoration effort using hatchery-reared larvae thanks to funding support from the West Coast Inland Navigation District.

In August 2012, adult bay scallops were collected for hatchery spawning. A successful spawn produced approximately 8 million larvae. The bay scallop larvae were raised in the hatchery for 10 days prior to release on Dec. 16, 2012. With the assistance of **John Stevely** (Manatee and Sarasota counties extension), we released the larvae in Lemon Bay and Gasparilla Sound. In Lemon Bay, larvae were released into a construction boom that was deployed in a circle to contain the released larvae. This controlled release will aid in measuring success. In Gasparilla Sound, we did a free release (no boom). Both sites will be monitored for at least one year.

It is important to note that this restoration project is considered experimental. Although results of a similar release years ago were promising, we must conclusively demonstrate that released larvae successfully produce adult scallops capable of spawning. If there is success, we can try and gear



Betty Staugler, left, and John Stevely construct small spat collectors during the larvae deployment.

Mike Braun, The News-Press

up for larger scale releases. Millions of scallop larvae may sound like a lot, but only a very small percentage may survive and grow to be spawning adult scallops. Fifteen volunteers assisted with the restoration project. Volunteers helped with collection of broodstock, setting up construction booms, release of larvae, and deployment and retrieval of monitoring devices. Additional volunteers support bay scallop recovery efforts throughout the year by participating in programs such as The Great Bay Scallop Search and Adopt a Scallop Cage Programs.

East and west coast aquaculture workshops succeed

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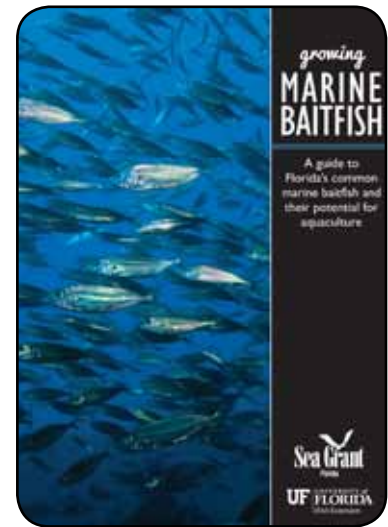
An Introduction to Aquaculture workshop was held in Brevard County on Feb. 4. It was the third in a series hosted by Florida Sea Grant, with previous workshops in Ft. Myers and St. Augustine. The workshop included speakers from Florida Sea Grant, the UF/IFAS Tropical Aquaculture Laboratory, and the Florida Department of Agriculture and Consumer Services.

Speakers gave an overview of Florida aquaculture, and talked about aquaponics, fish health management, pitfalls to avoid when investing in Florida aquaculture, and state permitting and aquaculture best management practices.

There were 32 participants at the workshop, all with varying interest in delving into aquaculture. Twenty-three people participated in a follow-up survey (72% response rate). Based on the survey, the majority of respondents were considering or planning on starting an aquaculture operation. Forty-one percent indicated that they wanted to learn more about a different type of aquaculture product, and 27% said they became more excited about aquaculture options in Florida. Overall, 94% of survey respondents were either moderately or extremely satisfied with the workshop with only one respondent being slightly satisfied.

On a related note, a six-month follow-up survey was recently given to those who attended the Ft. Myers aquaculture workshop hosted by **Joy Hazell, Betty Staugler, and Bryan Fluech**. Fourteen participants (21% of the workshop attendees) responded to the survey.

In regards to the degree in which participants used information from the workshop, 14% indicated they expanded their aquaculture business; 7% changed aquaculture products/species, 14% added a new aquaculture species to their business, and 7% had contacted a speaker for more information. Topics respondents would like to see offered in the future include live bait hauling, shrimp and baitfish, in depth water chemistry, and strategies for building strong partnerships.



Florida Sea Grant's newest aquaculture publication, Growing Marine Baitfish, reviews Florida's common marine baitfish species and their potential for aquaculture. The publication, written by Cortney Ohs and LeRoy Creswell, is available at <http://bit.ly/WLwrEd>.

Get ready for the NMEA national meeting in July 2013!

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I coordinated the 2012 annual meeting of the Southern Association of Marine Educators in November. The meeting was held at the beautiful Grand Bay National Estuarine Research Reserve. Eighteen SAME members enjoyed an exciting weekend of food, field trips, a silent auction and marine science activities on climate change, phytoplankton and more.



The 2012 SAME meeting was held at the Grand Bay National Estuarine Research Reserve in November.

The Grand Bay NERR headquarters is a certified LEED facility equipped with bunk rooms, two kitchens and plenty of meeting space. Led by **Captain Mike**, the group was treated to a boat tour of the reserve on a beautiful Saturday afternoon. You can learn more about the reserve at <http://www.grandbaynerr.org>.

The group discussed the upcoming planning and coordination of the National Marine Educators Association national meeting that will be July 22–26 in Mobile, Ala. SAME is the hosting chapter for the conference, and as a past president, I am co-chairing the meeting. For more information, check out <http://nmea.disl.org/>.

Meet our new agent!

Geoff Wallat joined Florida Sea Grant on Feb. 15 as the marine extension agent for Taylor County. He holds a bachelor’s degree in aquaculture and fishery



Geoff Wallat with his wife Christi and son Matthew (daughter Lauren is not pictured).

technology from the University of Rhode Island and a master’s in fisheries from the University of Florida. He is currently completing his Ph.D. work at the Indian River REC with Florida Sea Grant aquaculture specialist **Cortney Ohs**.

Geoff has more than 22 years of experience in both private and public aquaculture programs, research, development and extension work. He worked with Ohio State University’s Center for Aquaculture Development for more than 12 years, and was responsible for the state’s aquaculture research and extension program. For a good part of the 90s, he worked for the Sea Critters aquaculture company in North Key Largo, the nation’s largest producer of brine shrimp for the tropical fish industry. Join us in welcoming Geoff to the Sea Grant Family! E-mail him at gwallat@ufl.edu.

Caribbean Fisheries Exchange Program kicks off



Randel Thompson is the first person to participate in Florida Sea Grant’s Caribbean Fisheries Exchange Program. Thompson, a fisheries manager from Saint Kitts, is living on campus at the University of Florida until May. In addition to taking a course on geographic information systems, he is working with **Charles Sidman**, associate director of research, on another Caribbean project evaluating best management practices for the use of Fish Aggregation Devices.

Don Sweat Award

Doug Gregory, Monroe County Extension Director and Florida Sea Grant extension agent, has been awarded the Don Sweat Sea Grant Extension Award.

The award is presented annually to a Florida Sea Grant agent who takes initiative, creativity and leadership in his or her extension program. Since 1991, Doug has served as a valuable resource to the Florida Keys commercial fishing industry and natural resource agencies both as a scientific advisor and as an educator. He provides regular presentations to industry meetings, assists in community development opportunities, and facilitates fisheries research and management activities to empower local fishermen to participate in advancing their industry.

In recognition of his efforts NOAA awarded him their Public Education, Community Service and Media Award for his work to improve the public's understanding of commercial fishing, and for helping fishermen see the importance of sustainable fishing.



Doug's name has been added to the permanent plaque on display at the Florida Sea Grant state headquarters.

Coming Up

Adaptive Planning for Coastal Change: Legal Issues for Local Government

Friday April 19, 2013
9 a.m. to 5 p.m.

Long Key Natural Area & Nature Center
3501 S.W. 130th Ave.
Davie, FL 33330

The fee for this daylong seminar is just \$20, lunch included!

This seminar will introduce climate change law and focus on the most obvious impact for Florida, sea-level rise. It will present ways to develop local notice ordinances; describe rolling easements, and give examples of possible implementation; share planning resources available to communities working to address SLR; and much more. For more information, visit <http://conta.cc/XYcbc0>.

ArcGIS 10.1 Workshop

May 6–May 9
3086 McCarty Hall
University of Florida

This three-and-a-half day workshop will introduce novices to ArcGIS Desktop, the primary product used by professionals to compile, use and manage geographic information.

The training will consist of a series of short lectures, each to be followed by natural resource-based exercises that attendees will complete using ArcGIS 10.1. During the training, each participant will have access to a computer workstation and several trainers will be on-hand to provide assistance.

Registration is \$450 (\$250 for UF students). For more information or to register, contact **Corina Guevara** at (352) 392-6233 or corina@ufl.edu.

2013 Florida Seafood Brown Bag Webinar Series

2013 marks the third year for the Florida Seafood Brown Bag Webinar Series, continued in partnership with Sea Grant agents **Lisa Krinsky**, Miami-Dade County, and **Bryan Fluech**, Collier County.

The past 13 webinars educated hundreds of seafood consumers about the sustainability and safety associated with Florida's vast array of commercial seafood products and helped consumers make more informed decisions about purchasing Florida seafood products. Results have been promising. Online fact sheets, presentations, and webinar recordings have been downloaded more than 5,000 times and follow-up surveys indicate that 56% of respondents have increased their consumption of Florida seafood as a result of their participation in the webinar series.

This year, webinars will focus on "seafood health and safety." Webinars are offered from 12:15–12:45 p.m.

Dates and topics include:
 April 11, seafood and mercury
 June 12, health and nutrition
 Aug. 14, regulatory oversight
 Oct. 9, health in the home

Registration is free and available at: <http://2013seafoodsafetyseries.eventbrite.com>.

If you can't make it, don't worry, webinar recordings will be made available at: http://miami-dade.ifas.ufl.edu/environment/sea_grant_seafood.shtml.

Panhandle Outdoors Live 2013

Six Sea Grant agents in Northwest Florida will offer a series of workshops and fieldtrips as part of Panhandle Outdoors Live 2013.

- **Rick O'Connor**, Escambia County, will host a tour of the Weeks Bayou National Estuarine Reserve just across the state line in Alabama on April 2.
- **Brooke Saari**, Walton and Okaloosa counties, will take participants to through Walton County's coastal dune lakes on May 8 and on a 6.6 mile kayak trip through Boiling Creek to Yellow River on June 6.
- **Scott Jackson**, Bay County, will lead a kayaking and hiking adventure through the saltwater marshes of St. Andrews Bay on Aug. 15.
- **Bill Mahan**, Franklin County, will host a tour of the Apalachicola National Estuarine Research Reserve on Sept. 24.
- **Chris Verlinde**, Santa Rosa County, will lead a tour of Blackwater River State Forest on Oct. 3.

The fee for each trip is \$30 and includes lunch. For more information and to register, go to <http://panhandleoutdoorslive2013.eventbrite.com>.