



Shining a Light on Misconceptions about Climate Change

Can you tell whether these statements about the Earth's atmosphere and climate are true or false?

1. The hole in the ozone layer is a direct cause of global warming.
2. All types of pollution, including litter, cause global warming.
3. Weather and climate are the same thing.
4. The atmosphere is so vast that humans cannot affect it.
5. Climate change is a deeply contested issue among scientists.

Of course, all of these statements are false, but they represent some common scientific misconceptions held by children and adults in the United States.

"In science education, being aware of science misconceptions is really important, especially for basic concepts," explained Dianne Lindstedt, Louisiana Sea Grant education coordinator. "If people don't understand basic scientific concepts, then they can't understand the world correctly."

Lindstedt said the path to science literacy can be thought of as a pyramid, built on a foundation of awareness, knowledge, then informed decision making and stewardship. She said misconceptions begin at awareness and knowledge.

She defines a misconception as a view, opinion or conclusion that is incorrect because it is based on incorrect facts or faulty thinking or understanding. Lindstedt began battling climate change misconceptions in workshops she organized for teachers and informal educators. "It opens the door to the workshop and to the scientific concepts. It helps educators to think in a different way, which eventually leads to their students to do the same. It opens up the day for a dialog and gets participants interested in talking about climate science and communicating the facts clearly," said Lindstedt.

The conversation is important because it provides an awareness of what an audience may or may not know and an opportunity to provide correct information in a variety of ways.

As for the facts to correct these misconceptions:

1. The ozone layer, which is about 20 miles above the Earth, protects living organisms from the sun's harmful ultraviolet radiation. The hole in the ozone layer at the north and south poles was discovered

in the 1970s and was caused by chlorofluorocarbons (CFCs) found in aerosols. Global warming is a worldwide temperature increase due to greater concentrations of greenhouse gases in the lower eight miles of the atmosphere. CFCs are considered greenhouse gases and they play a small part in trapping heat there, but carbon dioxide is the primary culprit.

2. Children and adults tend to lump all kinds of pollution together. All types of pollution do not affect temperature in the atmosphere. Greenhouse gases contribute to warming by trapping heat.

3. Weather and climate are not the same. The difference is a measure of time. Weather is the day-to-day variation in atmospheric conditions. Climate is the average atmospheric condition over several years.

4. Human activities have increased the release of all kinds of pollutants into the atmosphere, causing a variety of problems. The increase of carbon dioxide and other greenhouse gases trap additional heat, adding to the heat-trapping gases that are already found in nature.

5. While a Yale study found that 41 percent of Americans believe there is a lot of disagreement among scientists about climate change and global warming, in fact, 97 percent of climate scientists agree that humans have had an effect on the climate.

In addition to speaking to teachers and informal educators, Lindstedt has engaged her Marine Extension colleagues in the discussion.

"If you are an educator who talks about science, it helps to be aware of how your audience could be interpreting the topic," Lindstedt said. "Certain kinds of questions or statements can be a cue for faulty understanding. If you're in the classroom, it is really important to address faulty thinking because it is difficult to correct the understanding of a scientific concept. For educators, it's helpful. It's useful also for Marine Extension Personnel to know how people may understand or misunderstand the science they're communicating on a daily basis. I don't just tell the audience about the misconception. I provide them with the scientific information to back it up."

Four to Join Coastal Science Assistantship Program

Four students pursuing master's degrees in the fall will be new participants in the Coastal Science Assistantship Program (CSAP), a partnership between the Louisiana Coastal Protection and Restoration Authority (CPRA) and Louisiana Sea Grant that provides graduate students with up to three years' financial support.

CSAP students receive \$25,000 annually while working on applied coastal ecosystem restoration research important to CPRA. The program also creates a pool of researchers and scientists from which CPRA can recruit.

Courtney Elliton is working toward her master's degree in the Department of Oceanography and Coastal Science at LSU with classes focusing



Courtney Elliton

on wetlands, sediment dynamics and ecology. Her project will study the interaction between sediment dynamics and wetland vegetation on Mike Island in the Wax

Lake Delta. Elliton contends that understanding how vegetation affects sediment retention is necessary for evaluating the effectiveness of river diversions, such as those proposed in Louisiana's Coastal Master Plan. After finishing her degree, Elliton plans to work in coastal restoration.

Katrina Hucks is studying in the Department of Biology at the University of Louisiana at Lafayette. She will be investigating the Coastal Master Plan's impact on wildlife populations as a result of changes to the landscape. Hucks

will use maximum entropy (ME) models for her research. The ME method promises to provide

better models predicting changes to wildlife populations as a result of the implementation of the Master Plan. Her research also should provide validation of the ME results when compared to the current Habitat Suitability Index models.

Phil Westbrook is working toward his degree in the Department of Renewable Natural Resources at LSU. His project will study the impact of oyster reefs on water quality. Specifically, Westbrook will look at the effects of restored oyster reefs with regard



Katrina Hucks

to carbon and nutrient sequestration and filtration capacity. While restored reefs have been studied for the ability to protect shorelines and aid in the creation of nekton habitats, the contribution of oyster reefs to water quality has yet to be quantified.

The fourth student was not selected by press time. However, his or her project will investigate the effect of oil and dispersants on coastal wetlands.

For more information on the program and how to apply, visit www.laseagrant.org/ops/assistantship.htm.



Phil Westbrook

UROP Research Projects Announced

The Louisiana Sea Grant College Program established the Undergraduate Research Opportunities Program (UROP) in 1992. It provides talented undergraduate students interested in pursuing advanced studies in marine-related disciplines with hands-on research experience. Projects receive funding in the range of \$1,500-\$2,500. UROP is coordinated by Matt Bethel, LSG assistant executive director of research. Katie Lea is the co-principal investigator.

"UROP is a wonderful opportunity for undergraduates," Bethel said. "Participating in the program can increase their competitiveness as graduate students and help them make career-related decisions. It also allows students to establish a working relationship with a faculty mentor."

In addition to performing their project under the guidance of a faculty member, each UROP student is required to produce a written final report of research accomplishments and to present their findings at LSU during a LSG-sponsored event. UROP students are expected to submit abstracts of their research results for a poster session or similar event at a statewide conference related to coastal issues. Students also are encouraged to present their findings at national and international symposia and to publish in peer-reviewed scientific journals.

UROP applications are accepted in November and December for projects starting the following March. Full-time undergraduate students at all Louisiana colleges and universities are eligible. Junior- and senior-level students may be better prepared to conduct research projects, but an application from any student who has the support of a faculty mentor will be considered.

Eleven projects have been funded for 2014. For details visit <http://www.laseagrant.org/studentresearch/urop/application.htm>.

Diver Safety Efforts Recognized

Chevron Environmental Management Co.'s Abandonment Division recently recognized Louisiana Sea Grant and LSU AgCenter Extension agent Thu Bui with a Vessel Encroachment Award.

Bui has been working since 2012 with Aqueos Corp. to make commercial and recreational fishermen aware when divers are in the water and that boats should keep their distance. The educational project began with bilingual signage at marinas instructing boaters about day and night diving shapes, and educating dive and fishing boats on how to communicate with each other.

Last year, working with the U.S. Coast Guard, National Institute for Occupational Safety and Health, and commercial fishing organizations such as the Southern Shrimp Alliance, Bui promoted a responsible mariner practices educational plan geared toward both dive vessels and fishermen. The effort included dive awareness brochures, posters and decals, as well as outreach efforts reaching nearly 400 fishermen at the Louisiana Fisheries Summit and Delcambre Dock Days. Additionally, oilfield support firms and diving companies implemented mariner safety communication methods in their weekly safety drills.

Sea Grant also has promoted the use of spar buoys, which are now being used by the diving industry to indicate where divers are submerged.



Stepping up Collaborative Efforts with a Sea Grant “Exchange Program”

Sea Grant Extension staff is tapping into a valuable resource — their out-of-state colleagues — to help generate new ideas for their own program’s efforts and to improve collaboration within the nationwide Sea Grant network.

Sea Granters from New Hampshire and Louisiana have recently kick-started efforts for what they call a “Sea Grant Exchange Program,” where, like an exchange student, staff spend time working with their counterparts in other areas of the country for a small period of time.

Twyla Herrington, Louisiana Sea Grant and LSU AgCenter area fisheries agent and Alan Matherne, LSG/AgCenter marine agent, met Gabriela Bradt, New Hampshire Sea Grant/UNH Cooperative Extension marine fisheries specialist, at the 2013 Sea Grant Academy. Their bond forged over swapping fisheries outreach stories from their home states, and that got them thinking: Why not continue the beneficial idea exchange that starts at the Academy and keep the momentum moving forward?

Their first exchange in March 2014 allowed Bradt to travel to Louisiana to participate in the Louisiana Fisheries Summit where she presented

information on direct marketing of seafood in New England.

The experience allowed Bradt to start thinking of new ways of approaching challenges and opportunities back home.

“I came back to New Hampshire with a head full of ideas for potential additions and changes to my fisheries outreach efforts,” Bradt said.

The experience also helped Bradt to establish new contacts for potential future collaborations, she added. She accompanied Herrington and other LSG fisheries extension staff throughout the rest of their weekly activities, where Bradt said she learned about Herrington’s work with fisheries and ecotourism in areas impacted by Hurricanes Katrina and Rita. Bradt said it was an eye-opening experience to learn about the various ways extension agents are accessed by their stakeholders.

“I did not know that as Sea Grant agents, we could be called upon to find out information on bait types and prices, or to speak to insurance providers,” she said. “It’s clear that many different people depend on Twyla and use her for the great resource she is.”

Herrington said she learned a lot as the host, too. “As a field agent, I assumed everyone has diverse duties but Gabby’s job is much more focused than mine,” she explained. “Understanding the expertise that resides within this network is invaluable for future projects and even dealing with current ones.”

“Thanks to this exchange, I am now comfortable picking up the telephone and calling these fellow Sea Grant agents if I have questions or to refer them to other people, because I now have an idea of what they can offer both in knowledge and experience,” Bradt explained.

Although there is not currently a formalized process for these exchanges, Bradt and Herrington hope other Sea Grant programs are able to take advantage of their peers’ knowledge and efforts by participating in exchanges similar to this effort.

- Rebecca Zeiber, New Hampshire Sea Grant

Pictured above: Extension agents Twyla Herrington (left) and Gabriela Bradt at the welcome sign on Grand Isle. Bradt recently spent time working with Herrington as part of an Extension agent exchange program.

Meetings, Seminars Aim to Assist Louisiana Fishermen

It’s no secret that being a commercial fisherman is a demanding job. Despite the importance of natural fisheries to Louisiana’s economy and culture, many commercial fishermen struggle turning a profit in an industry that generates nearly \$1.5 billion annually.

In an effort to support new and existing commercial fisheries businesses, Louisiana Sea Grant, the LSU AgCenter and the Louisiana Department of Wildlife and Fisheries continue to work together providing educational events targeting the state’s commercial fisherman. Since February, the three, working with additional partners, have held several workshops including: the Louisiana Fisheries Summit, Delcambre Dock Day, St. Bernard Dock Day and Crab Industry Workshop 2 and 3.

“We want to keep commercial fishermen up to date on what’s going on with local, state and federal regulations while teaching them how to expand and increase the profitability of new and existing fisheries businesses,” said Rex Caffey, Marine Extension leader for Louisiana Sea Grant and the LSU AgCenter.

The 2014 Louisiana Fisheries Summit, held March 12-13 in Houma, attracted close to 300 commercial fishermen, seafood dealers and processors. The summit consisted of a seminar, trade show and “dock day,” which served as both an educational and networking opportunity for participants.

“The summit provided the latest information and updates relating to commercial fishing and seafood production with a focus on increasing the profitability of businesses in the industry,” said Alan Matherne, Louisiana Sea Grant and LSU AgCenter Marine Extension agent for Terrebonne and Lafourche parishes. “In addition to being a learning experience, the summit

was an opportunity for participants to make new contacts and expand the horizons of their businesses.”

With more than 50 attendees, Delcambre Dock Day was held a week later at the Shrimp Festival Building in Delcambre, and featured U.S. Coast Guard technology displays and a direct marketing/micro-processing demonstration.

“We hope these events give commercial fisherman a broader view of what goes on in the industry,” said Thomas Hymel, Sea Grant and AgCenter Extension agent for Iberia, St. Martin, Lafayette and Vermilion parishes. “In the end, we hope the information we provide helps these hard-working people grow their businesses and make more money to provide for themselves and their families.”

Twyla Herrington, Louisiana Sea Grant and LSU AgCenter Associate Area Agent for Plaquemines and St. Bernard parishes, took the lead in organizing St. Bernard Dock Day and Crab Industry Workshops 2 and 3 with the help of Sea Grant/AgCenter colleagues Julie Anderson and Carol Franze. Those events focused on direct marketing, eco/agri-tourism and business plan development.

“I would like to see ecotourism become a collaborative endeavor between existing ecotourism businesses and the fishing industry,” said Herrington. “Partnerships benefit both groups and allow the general public an opportunity to truly experience South Louisiana.”

Additional commercial fisheries workshops are scheduled throughout 2014. For a list and additional information, visit www.laseagrant.org.

Extension Exchange Offers Insights into Storm Recovery

More than a year and a half after Hurricane Sandy made landfall in the northeast, the Sea Grant programs in New Jersey, New York and Connecticut are still dealing with storm recovery issues – ranging from community resilience and flood insurance to impacts on recreational fisheries and marina reconstruction. In the nearly nine years since Hurricanes Katrina and Rita, Louisiana Sea Grant has addressed many of the issues Sandy survivors continue to face and may have to manage for years to come.

“Although we offered assistance immediately after Sandy made landfall in October 2012, we realized there’s more we could do for our sister programs as they trek down the long recovery road,” said Rex Caffey, Louisiana Sea Grant and LSU AgCenter Marine Extension leader. “We not only have experience with recovery from Katrina and Rita in 2005, we also had Hurricanes Gustav and Ike in 2008, as well as Hurricane Isaac in 2012.

“We saw an opportunity to do some recovery ‘inreach’ with the Sea Grant programs hardest hit by Sandy, and we opened our doors to them,” Caffey said. “It was a chance for them to not only learn from what went right, but what didn’t go as planned and to make them aware of potential pitfalls and issues.”

In May, Pete Rowe, New Jersey Sea Grant Extension leader; Jon Miller, N.J. coastal process specialist; Ryan Orgera, N.J. coastal community resilience project manager; and Jay Tanski, New York Sea Grant costal processes and facilities specialist, flew into New Orleans for a week-long storm recovery learning experience.

“We drove nearly 500 miles and met with about 40 people who shared their Katrina and Rita recovery experiences and perspectives,” said Roy Kron, Louisiana Sea Grant communications director. The group saw first-hand how the town of Delcambre has rebounded, learned that only 60 percent of Cameron Parish’s population

has returned, and met with Houma-based engineers about hazard mitigation. They also learned about marina and harbor issues at a New Orleans recreational marina now shared with commercial fishermen and when they called on another New Orleans yacht harbor



Above: Louisiana Department of Wildlife and Fisheries biologist Mark Schexnayder (second from left) discusses Bucktown Marina redevelopment following Hurricane Katrina with New Jersey Extension leader Peter Rowe (left), NJ coastal community specialist Ryan Orgera, and New York coastal processes specialist (right) Jay Tanski.

Sea Grant Holds Crab Workshop at Entrepreneurship Center at Nunez

Louisiana Sea Grant presented its third crab industry workshop in April at Nunez Community College in Chalmette.

During the morning-long workshop, which focused on business plan development, the 11 participants listened to presentations on developing business plans, how to move forward with their business

objectives, and available business options such as fishing charters, trawling trips and nature tours. There also was a breakout session that allowed attendees to begin writing their own business plans with the assistance of workshop facilitators.

The workshop was held at the newly opened Entrepreneurship Center at Nunez. The Center, made possible through funding from the U.S. Department of Labor’s Trade Adjustment Assistance Community College Career (TAACCCT) initiative, is focused on providing resources to students and community members interested in developing their own businesses.

Louisiana Sea Grant and LSU AgCenter Extension personnel Twyla Herrington, Julie Anderson and Carol Franze developed the trio of workshops. The first two covered the topics of shedding as well as general industry updates.

“Nunez is an excellent and underutilized resource for the St. Bernard community. They have been very receptive to this partnership,” said Herrington. “Ed Shedlock is working very hard to make new opportunities available to the public through the Entrepreneurship Center.”



The Louisiana Fisheries Summit attracted more than 300 commercial fishermen interested in learning about new fishing technologies and how to improve their businesses and profitability.





Above: The week-long visit ended with a panel discussion and question and answer session covering a variety of recovery topics. Pictured from left are: Mark Davis, Tulane University Law School; Lauren Land, Louisiana Sea Grant sustainability coordinator; Carol Franze, LSG/LSU AgCenter associate extension agent; deEtte Smythe, St. Tammany Parish Department of Engineering; Maurice Wolcott, LSG/AgCenter GIS specialist; Rex Caffey, LSG/AgCenter marine Extension leader; Jim Wilkins, LSG Law & Policy Program director; Jon Miller, NJ Sea Grant; Ryan Orgera, NJ Sea Grant; Peter Rowe, NJ Sea Grant; Jay Tanski, NY Sea Grant; and Bruce Sharky, LSU landscape architecture professor.



Above: A visit with Delcambre community leaders about the town's recovery from Hurricane Rita was one of the stops made by the four Sandy survivors.

still struggling to get recovery from Katrina off the ground. The visitors also heard of the dramatic demographic shift experienced in St. Bernard Parish and met with academics and other Extension professionals about what other recovery resources may be available.

“There were several central themes, including the need for organic and bottom-up approaches; the need for patience; and the need for effective communication among agencies, the states and communities,” said Orgera. “The need to foster local approaches resonated with me most acutely.”

“I wasn’t sure what to expect,” said Rowe. “But I came away with a philosophy that includes a lot of ‘patience and perseverance’ to achieve your goals ... Individuals and communities must be patient and persistent, with the squeaky wheel getting some grease. A vision is needed to get buy-in and funding to reach the goal of returning a community to its character, while at the same time making it more resilient and forward thinking in the process.”

“One of the things that struck me most was the consistency of the message we received from those impacted regarding the difficulties and, especially, the problems associated with dealing with the various federal agencies involved in relief efforts,” said Tanski. “The situations encountered at the New Orleans Yacht Club and with the owner of the oyster business in St. Bernard were

particularly bleak, in my opinion. The fact that no work has been done at the yacht club and that the oysterman’s business was only 30 percent of what it was pre-hurricane – almost ten years after Katrina and Rita – was shocking, as was the condition of the Ninth Ward.

“I’ve already used the information gained from this trip to brief state officials and marina owners who are members of the New York Rising (NY’s version of Louisiana’s Road Home Program) marina subcommittee,” added Tanski. “For the state people it was a cautionary tale that elicited the response of ‘We cannot let that happen here.’ ”

More on the Web:

<http://tinyurl.com/kjnbsfe>

Message from the Executive Director

dis-cov-er-y (dih-skuhv-uh-ree)

1. the act or an instance of discovering
2. something discovered

The first three words in the Sea Grant lexicon are research, outreach and education. But as imperative as those three terms are to our mission, the word discovery is equally important. A hint of discovery lives in each of those three Sea Grant pillars.

It’s easy to draw the correlation between research and discovery. You can see it in the work of the students at LSU, UL Lafayette, Tulane, Nicholls, McNeese and Loyola who are receiving Undergraduate Research Opportunities Program (UROP) funding from Louisiana Sea Grant. It’s also apparent in the research by graduate students funded through the Coastal Science Assistantship Program (CSAP).

But there’s also an element of discovery in education when a commonly held misconception is invalidated and then replaced by proven, scientific fact. Regardless if it is a child or an adult, you can see it in the person’s eyes when they begin connecting the dots and truly understand how a system works.

Discovery is also an essential part of outreach when new products and knowledge assist in accomplishing traditional tasks or solving problems. Sometimes it’s a fisherman acquiring a new technique that results in a business becoming more profitable. At a recent fishery summit, Sea Grant provided several examples of discovery for an industry that can be more competitive by embracing innovation. Other times, it is Extension personnel absorbing valuable information from colleagues in a distant Sea Grant program across the nation that provides new knowledge that can be used at home. Discovery is an essential part of our outreach program to make these accomplishments happen.

Discovery has been and will be an enduring part of the Sea Grant legacy. And we are proud to help foster “something being discovered” as part of our mission of Research-Education-Outreach.

Discovery • Integration • Application – Louisiana Sea Grant.



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Louisiana Sea Grant Adds Three New Faces

Vanya Cherneva is Louisiana Sea Grant's new IT analyst. She will be splitting her time between LSG and LSU's School of the Coast and Environment. Cherneva is working toward her doctorate in computer engineering at LSU after earning both a bachelor's and master's degree from



Left to right: Vanya Cherneva, Ryne Artigue and Leslie Davis

Vasil Levski National Military University in the Republic of Bulgaria. Cherneva also has worked as a graduate assistant with the LSU AgCenter and as a teaching assistant in the School of Electrical Engineering and Computer Science since 2012.

The Louisiana Fisheries Forward (LFF) program is moving forward, and Ryne Artigue and Leslie Davis have both joined the team to begin implementing the new commercial fishing professionalism initiative.

Artigue is a recent graduate of LSU with a bachelor's degree in mass communication. He is a communications coordinator for the LFF program. Before coming to LSG, Artigue conducted research communications for LSU's Office of Communications and University Relations.

Davis is LFF's new technical writer. She earned her Bachelor of Science in advertising and public relations from Texas Christian University. Before joining LSG, Davis worked as a communications specialist and development director. She is familiar with LSG through her work with the Louisiana Direct program, creating content for multiple platforms as well as helping to brand the program and LSG's pilot Vermilion Bay Sweet shrimp product.