Coastal Voice

THE NEWSLETTER OF THE AMERICAN SHORE & BEACH PRESERVATION ASSOCIATION

— October 2021 —

That's a wrap from NOLA!

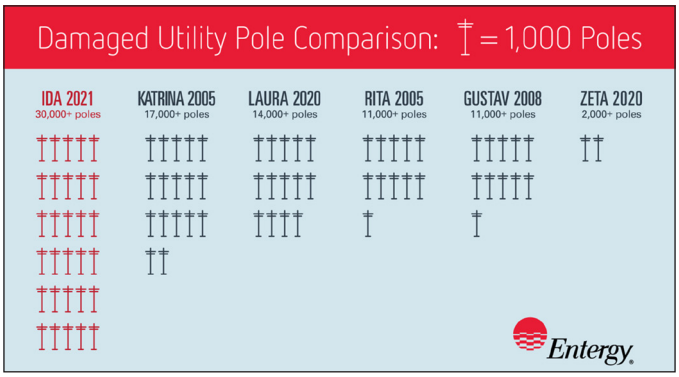
From all of us at ASBPA, we send our sincere thanks to the many hands who made the first-ever hybrid 2021 National Coastal Conference, "Geaux Resilient," in New Orleans such a success! We will have full conference coverage in our November issue.
— Leslie Pickel, ASBPA Managing Director

Ida highlights community disaster response, need to invest in coastal infrastructure

By: JACK KOBAN, Ph.D., P.E., P.G., Board Member, ASBPA Central Gulf Coast Chapter

On Sunday, Aug. 29, 2021, Hurricane Ida made landfall near Port Fourchon in southern La-Fourche Parish where it battered the Louisiana coast before moving slowly inland, carving out a swath of destruction stretching from the Louisiana capital of Baton Rouge to Biloxi 145 miles to the east in neighboring Mississippi. At the time of landfall, Ida was just shy of a Category 5 storm with sustained winds of 150 mph and individual reports of gusts topping 170 mph — tying it with 2020's Hurricane Laura for No. 5 all time in terms of wind speed.

Remarkably, the storm maintained much of its intensity even after landfall, passing just east of Baton Rouge at or near Category 3 status. Nearly a week after its U.S. landfall, it carried with it enough precipitation to cause catastrophic flooding in parts of Pennsylvania, New York, and New Jersey which contributed to nearly 50 deaths in the Northeast, roughly two-thirds of Ida's U.S. total reported fatalities to date.



As with every all-too-common flood or hurricane on the Gulf Coast, Louisianans have rushed to the aid of coastal and inland communities impacted by Ida, volunteering their time and resources to those in need. FEMA, the Red Cross, and other large-scale relief organizations typically focus their efforts on large population centers such as New Orleans. However smaller, more nimble volunteer groups such as the Cajun Navy and Baton Rouge Emergency Aid Coalition (BREAC) have quickly mobilized to collect and distribute essentials to the smaller, outlying areas, many of which despite taking the most

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severe impacts are often seemingly overlooked. The efforts of these smaller groups and individuals have come despite the fact that they themselves have been impacted by property damage and power outages. According to Entergy which supplies power to much of the Gulf Coast, Ida's disruption to power ranks the highest among storms to hit the area topping even Hurricane Katrina.

These power outages have exacerbated fuel shortages, resulting in long lines of people at service stations looking to fill not only the tanks in their vehicles, but also portable generators needed to power refrigerators, fans and air conditioning units used to combat Louisiana's oppressive September heat. Although these fuel shortages limit the reach of volunteer relief, they have nevertheless found ways to provide aid. For example BREAC, led by Baton Rouge pediatric emergency physician Dr. Ashley Saucier, has tapped their network of volunteer pilots to help fly supplies to areas such as Galiano, LA, where ground transport is infeasible due to fuel supply limitations, or restricted roadways.

In other hard-hit areas such as LaPlace, LA, where wind-driven rain, flooding, and storm surge impacted numerous homes, friends, neighbors, and political leaders have answered the call to deliver aid to the affected communities.

Garret Graves, Congressman for Louisiana's 6th District and past recipient of ASBPA's Congressional Friend of the Coast Award, has organized volunteer work crews to assist with everything from debris removal to gutting water-damaged homes. Although Graves (R-LA) is a delegate in legislative terms, he is not one to simply delegate his disaster response work, but rather he has rolled up his sleeves or in some cases climbed onto roofs to get the job done — all while still tending to legislative efforts to alleviate current and future burdens of those affected by coastal disasters.

A BREAC team getting ready to move supplies to hard-hit areas: (from left) Chris Groh, Jack Koban, Ashley Saucier, Clair Cashio and John Gould.

As refreshing as it is to see such a hands-on response from an elected representative, the most important recovery and restoration tasks remain in Washington, DC, as Congressman Graves will readily tell you. As a longtime coastal champion, Graves understands how important it is for this storm to result in continued legislative improvements to coastal resiliency, flood protection, and infrastructure — which starts with legislation to provide the funding needed to develop projects and programs that will mitigate future

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Donations received at LaPlace Sheriff's Office Training Facility Distribution Center.

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impacts rather than simply responding to each subsequent disaster.

If there is any positive to be taken in the immediate aftermath of Hurricane Ida in Louisiana, it's that previous investments made into coastal restoration and flood control infrastructure prevented what could have been far more deleterious impacts. As devastating as it was and continues to be, this event was not what some feared: a repeat of Katrina, which made landfall 16 years to the day before Ida. Despite being a more powerful storm at landfall than Katrina, Ida did not deliver the same catastrophic flooding in the New Orleans area that made Katrina a historical reference point to the citizens of the Gulf Coast.

It is easy to point to the immense investment into the Hurricane & Storm Damage Risk Reduction System (HSDRRS) as a primary reason for the reduced impacts of this storm, but the significance of Louisiana's commitment to coastal restoration cannot be overstated.

The formation of Louisiana's Coastal Protection & Restoration Authority (CPRA) which was prompted by the destruction caused by Hurricanes Katrina and Rita has been a catalyst for perhaps the world's most focused and ambitious coastal master plan, and their efforts over the last decade and a half had a profound mitigating effect for the greater New Orleans area. That said, many communities outside of HSDRRS such as Houma, Mandeville, and LaPlace were devastated, and highlight how much work must still be done.

Legislation such as the Building Resilient Infrastructure and Communities (BRIC) Act and the Gulf of Mexico Energy Security Act (GOMESA) help to deliver projects that enhance resiliency in coastal communities. Other pending legislation such as the bipartisan Infrastructure Investment and Jobs Act (IIJA) which was negotiated in part by 2020 ASBPA Congressional Friend of the Coast award recipient, Sen. Bill Cassidy (R-LA), proposes to invest heavily in resilience, roads and bridges, power infrastructure, ports, waterways and more that could potentially lessen the impacts of future natural disasters across the country.

Top, left and right: Congressman Graves, Kelly Hancox and Alex Erwin placing tarp on damaged roof in LaPlace, LA. Above: Graves' volunteer crew after partially gutting a water-damaged home in LaPlace, LA. From left: Jack Koban, Kelly Hancox, Claston Bernard, Congressman Graves, David Cavell, Leighton Wood and Alex Erwin.

Improving evacuation routes and strengthening the power grid are perhaps expensive measures, but as HSDRRS demonstrated, the old adage "an ounce of prevention is worth a pound of cure" still rings true.

Sen. Cassidy is also working across the aisle with fellow Congressional Friend of the Coast Award recipient, Sen. Sheldon Whitehouse (D-RI) to co-author the Reinvesting in Shoreline Economies and Ecosystems (RISEE) Act which seeks to expand GOMESA while also establishing a similar funding stream from offshore wind energy which could greatly benefit all coastal states. The passage of these and other bills are critical to sustainable coastal economies and communities around the country.

These bills often struggle for support as they are seen as benefitting a small portion of the country, but that outlook could not be more wrong. In addition to Ida's direct impacts felt locally, the disruptions to commerce are felt at a national scale and threaten many inland states, making coastal resiliency an issue of national importance. The Mississippi River is estimated to account for hundreds of millions of dollars a day in commerce, stretching across a vast network of inland

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Ships anchored along the Mississippi River in Louisiana following Hurricane Ida.

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ports, which Ida brought to a halt.

Port Fourchon, where Ida first made landfall, helps to facilitate the bulk of the U.S. Gulf of Mexico energy production which has a significant impact on national energy security. Even wind energy is impacted by Louisiana's ports, with vessels and component manufacturing supporting wind farm development off the coast of New England based out of Louisiana's Mississippi River port complex.

Considering Ida's far-reaching direct impacts and even further reaching effects to the national economy, it is plainly evident that we cannot simply take reactionary measures against coastal disasters as they increase in frequency and intensity, but rather we must continue to develop and support legislation that promotes healthy and resilient coastal economies, communities, and environments. ❖

Blue Flag assessment questionnaires go live

By: ANNIE MERCER, ASBPA Program Coordinator

The Blue Flag workshop held at ASBPA's National Coastal Conference: "Geaux Resilient," was the last step in launching the Blue Flag program in a new country. While our pilot phase continues, interested beaches can engage with the Blue Flag USA program in several ways:

- Reach out to staff to set up an interest meeting.
- Review online materials and the blueflag.us website.
- Start talking to local and state partners about criteria implementation.
- Request access to the self-assessment questionnaire.
- Fill out the self-assessment questionnaire and submit the processing fee.

BLUE FLAG USA

Self-assessment questionnaires are accepted on a rolling basis. Once an interested beach completes step five, they move to candidate status in the application process. Candidates have access to specific criterion tool kits, manager meetings, previous and future workshops, and more. Contact staff via email at annie.mercer@asbpa.org to set up an interest meeting or request access to the questionnaire. ❖

USGS science for a changing world

Still time to be part of user assessment of USGS Online Coastal Hazards Tools

By: NICOLE ELKO, ASBPA Science Director

ASBPA and the USGS Coastal and Marine Hazards and Resources Program (CHMRP) are seeking participants to help assess the effectiveness of online coastal hazards tools. This is the next step in a USGS-supported ASBPA study to evaluate stakeholders' top coastal management challenges.

Please share your experiences with the Total Water Level and Coastal Change Forecast Viewer, Coastal Change Hazards Portal, and Hazard Exposure Reporting and Analytics tools to help us understand how you use them to find technical information and data. Results are critical in ensuring products are useful to address today's most pressing coastal challenges.

Feedback is being collected in a short survey that will remain open until Oct. 15, 2021. You can find the link from the home page of our website. Your responses can be edited if you return to the survey from the same device. All responses to the survey are anonymous. However, if you include your email (optional), we will send you a copy of the survey summary. Your email will not be distributed or included in any dissemination.

If you have any questions about this survey, please contact ASBPA Science Director, Nicole Elko at nicole.elko@asbpa.org. On behalf of USGS and ASBPA, thank you in advance for your participation. ❖

SNP Chapter:

Recognizing and promoting students and young professionals in coastal engineering

By: JESSIE PASKOSKI, Oregon State University Graduate Student; RACHEL INNOCENTI, Texas A&M University Graduate Student & USACE Research Biologist; and MARO PONTIKI, Social Chair of SNP Chapter and U Delaware Graduate Student

Jessie Paskoski:

Investigating the mobility of unexploded ordnances on the coastal zone

My name is Jessie Paskoski, and I am a second-year coastal and ocean engineering master's student at Oregon State University (OSU). Originally from the land-locked state of Utah, I aspired to preserve the biodiversity of aquatic ecosystems. This led me to the East Coast where I completed my bachelor studies in Environmental Engineering at the University of New Hampshire (UNH) in 2016. At UNH, I was introduced to scuba diving in a collaborative setting with passionate marine and ocean scientists. It was also where I first met my present advisor, Dr. Meagan Wengrove, who inspired me to attain a minor in Ocean Engineering.

After completing my undergraduate studies, I moved to the South and worked as an electrical engineer at the Naval Oceanographic Office; as an underwater acoustic transducer production engineer at Transonic Inc., a company that specialized in building transducers that detect, assess, and monitor underwater physical and biological characteristics; and as an engineer at Chiniche Engineering & Surveying, an amazing family-owned civil engineering firm in Mississippi.

Indeed, I have witnessed effortless collaboration across the multiple disciplines of Ocean Engineering that engage in projects of nature-based solutions, national security, as well as acoustic designs for oceanographic research. When I conducted shallow-water hydrographic surveys for a beach nourishment project, I was intrigued by the drastic morphological changes of the coastal system that were induced by storm surges. As such, I wanted to increase my knowledge of sediment transport and coastal engineering to better serve the public and decided to attend graduate school.

My graduate research examines the influence of heterogeneous sediment properties on munition mobility patterns. Historically, munition mobility exploration has been performed on beaches of sandy or muddy bottoms. However, nearly 24% of Formerly Used Defense Sites (FUDS) containing military munitions are in coastal environments composed of mixed sand and gravel.

Thus, the primary objective of my research is to classify the vulnerability of munition migration, exposure, and burial on mixed grain beaches within the swash zone. I will also attempt to determine the influence of beach states on swash bore acceleration and corresponding impact to munition mobility. Our hypothesis is that heterogeneous beach compositions will influence munition migration and burial patterns differently than homogeneous sediment environments.

In summer 2021, I completed over 300 trials of dam-break experiments in the Precision Wave Flume (33 m x 0.6 m x 0.77 m) at the Center for Applied Coastal Research at the University of Delaware. My research was performed in collaboration with my advisor, Dr. Meagan Wengrove, Dr. Gabriel Garcia Medina from the Pacific Northwest National Laboratory in Seattle, University of Delaware professor Dr. Jack Puleo, postdoctoral researcher Dr. Manoj Gangadharan, and graduate students Temitope Idowu and Emily Chapman.

We conducted experiments on beach compositions of pure sand, pure cobble, and two mixed grain beaches with a 30% and 70% cobble to sand ratio. For each sediment composition, three munition types varying in size and density were examined during five consecutive, single-dam-break bore releases with run-up extents of 5m on a 1:7 beach slope. Our goal is to attain a complete, colored, three-dimensional analysis of munition and cobble transport pre-, during- and post-swash events.

Results from this project will be used to enact future laboratory tests, field surveys, and potentially provide a broader understanding of mixed grain sediment transport patterns. Overall, I hope this work will contribute to prioritizing future FUDS restoration efforts that return effected areas back to the public for ecological and recreational use. ❖

Rachel Innocenti:

Guiding sustainable coastal protection within the context of a changing world

My research aims to guide sustainable coastal protection within the context of a changing world. While the traditional go-to solution for coastal beach-dune erosion has been "hard" engineered structures, I study the potential uses and benefits of ecosystem-based protection features. By aligning coastal protection design with natural processes, these features can be less expensive, more sustainable, and more resilient compared to engineered structures.

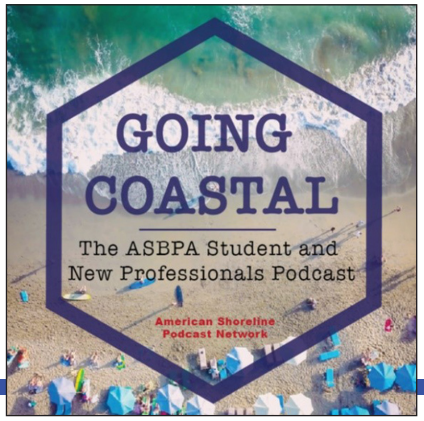
Recently, my research has focused on the protective abilities of two naturally occurring ecological features of beach-dune ecosystems: beach wrack and dune vegetation. These are known to add food, forage and protection to coastlines, but they also have the potential to reduce erosion.

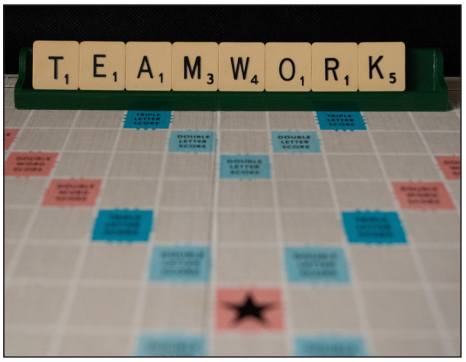
My investigation of the effect of beach wrack on sand mobility found that the pelagic macroalgae Sargassum spp. not only stopped beach erosion directly, but also reduced erosion-causing processes as it interacted with waves offshore. On the other hand, a collaborative large wave flume project that I was involved, showed dune vegetation played a complex role in dune erosion during storm conditions, through the formation and propagation of microscopes around vegetation stems.

Ecosystem-based coastal protection features can offer a sustainable solution as climate change worsens and sea level rise threatens the worlds' coastlines. Whether it be salt marsh creation, the implementation of living shorelines, or dune restoration, my goal is to understand how these features function to ensure their appropriate application.

More information about my work and my research publications can be found on LinkedIn, https://www.linkedin.com/in/rachel-innocenti-361438196, and on Orchid, https://orcid.org/0000-0002-0669-407X. ❖

The SNP has a new podcast called "Going Coastal," addressing all things coastal for current and emerging coastal professionals across the nation, co-hosted by Heather Wade, Jon Miller, and Marissa Torres. Listen wherever you get your pods and tune in and enjoy. ❖





ASBPA seeks new executive director

ASBPA is seeking our next leader to build on the organization's 95 year legacy of preserving, protecting, and enhancing our nation's coasts by merging science and public policy. Our new Executive Director will lead efforts in government affairs, strategic partnerships and outreach, fundraising, and vision-setting, while serving as the primary public spokesperson for the organization. We have a strong preference that the position be based in the Washington, DC metro area, while being supported by four full and part-time contracted staff located across the southeast. Please visit asbpa.org to read the full RFQ. ❖

Job posting:

The University of North Florida invites applications and nominations for the position of Director of the Taylor Engineering Research Institute. The Director position is a 12-month faculty administrator position within the College of Computing, Engineering, and Construction, with direct reporting responsibilities to the Dean of the College. For more information and to apply visit www.unfjobs.org. ❖