An unforgettable conference ahead

By GORDON THOMSON, National Coastal Conference co-chair

Finally, a portion of 2020 that we will always remember: ASBPA’s National Coastal Conference! We recognized early on that creativity was essential to make this conference memorable. Although it is difficult to top mini-golf from last year or the engineers’ domination in volleyball two years ago, our conference games committee has been hard at play to crank up our frivolity.

We recognized that an online conference provides a unique opportunity to encourage more variety in coastal-related presentations. The paper selection committee developed a program with presentations spanning the globe, from the depths of the Atlantic Ocean to the shores of Australia. We also jumped on the theme of diversity. We have an amazing panel of talented women to discuss Coastal STEM, and I’m looking to understand how to get my daughters as excited about the science behind beaches as I am.

Another unique opportunity was to invite a titan from industry that could not normally spare the time to travel to a conference. CDM Smith President Tony Bourchard will discuss how he is approaching climate change, sustainability and engineering with nature. We also looked for an international perspective related to one of the key topics of our time, coastal resilience. Dan Stander will discuss how to use data and analytics to master the language of finance and attract capital for coastal resilience projects.

My resilience has been tested this year, and a day at the beach would seem like just the solution. However, the coronavirus has presented beach managers major dilemmas and one of our plenary sessions will discuss why beach towels are 6 feet long. Lastly, in these days of reality TV where the “actors” don’t have much in the way of actual credentials, Dr. Jim Delgado is one of the world’s most acclaimed marine archaeologist. You may recognize him from his appearances on the National Geographic’s series, “Sea Hunters.” He will regale us with stories about shifting sands uncovering ship wrecks.

UPCOMING DEADLINES:
- Sept. 6 — Student award nominations due
- Sept. 28 — Regular conference registration deadline
- Oct. 7 — Annual meeting... online!
- Oct. 13 — National Coastal Conference begins... online!
- Oct. 20-21 — Short courses online
- Oct. 23 — Photo contest deadline
The reason I want to participate in the ASBPA 2020 Conference is because wise coastal management is vital if we are not to leave future generations with undesirable legacies. Each country develops its own approach to fit the issues and political systems that prevail in that country. However, there are many challenges, and solutions, that are universal and so we can learn from one another. “ASBPA, although understandably U.S.-centered, provides us coastal managers in other countries with a vital communication link with what is going on in the USA, what is working and what is not. In doing so it enhances our abilities to deliver better local management solutions, and hence ASBPA fulfills a far greater role than I suspect many understand — and is certainly appreciated by those of us a half a world away.” — Angus Gordon OAM, Principal Consultant, Coastal Zone Management and Planning, North Narrabeen, Australia

“ASBPA’s Annual Meeting is an excellent platform for coastal professionals to share knowledge, network, and learn from each other’s experiences.” — Tim Kana, Senior Principal, Coastal Science & Engineering

“ASBPA is an organization that provides a platform for coastal professionals to learn, network and grow. I’ll be attending to learn about the latest trends in coastal management.” — Jon Miller, Research Associate Professor, Stevens Institute of Technology

Why should you attend?
- More than 150 speakers
- Posters galore... available before and during the conference
- 30+ exhibitors
- Networking opportunities
- No travel and no hotel costs
- Front row seat
- See posters and exhibitors on my schedule
- Go to recorded sessions after the conference
- Learn from the best in the world
- Earn up to 16 professional development hours

I’m participating in the ASBPA national conference to find out about successful natural infrastructure shoreline restoration projects and catch up on the emerging issues facing coastal communities.” — Shannon Cunniff, retired Environment Defense Fund

A lot of hard work has gone into putting this conference together to bring you the best of in-person presentations and virtual media, you are REALLY going to enjoy it.” — Lee Weishar, Senior Scientist, Vice President Environment and Climate, Woods Hole Group

I’m going to ASBPA’s National Coastal Conference because no better place to learn about projects that mix science & engineering for resilient coastal communities.” — Lynette Cardoch, Director, Resilience & Adaptation, Moffatt & Nichol

I’m going to ASBPA’s National Coastal Conference because of the always awesome posters and presentations and to improve my virtual networking skills!” — Tiffany Roberts Briggs, Assistant Professor, Florida Atlantic University

Join us online for ASBPA’s Annual Meeting
In normal times, you’d have to travel to attend ASBPA’s annual meeting. This year, we are holding the meeting by Zoom Webinar on Wednesday, Oct. 7 at 4 p.m. ET, 3 p.m. CT, 1 p.m. PT and 10 a.m. HT. Each of you will receive a Zoom invite. Please put this on your calendar. On Sept. 4, we will be emailing proxies to send in if you cannot attend.

We have a big board of directors slate to vote on: Maritza Bareto, Russ Boudreau, Susan Brodeur, Eddy Carter, Cheryl Hapke, Margarita Kruyff, Nancy MacPhee, Jon Miller, Joan Pope, Tom Richardson, Phill Roehrs, Julie Rosati, Peter Seidle and Reuben Trevino.

A great deal is going on with ASBPA. The annual meeting is the place to get a sneak peak!


Thanks to all our conference sponsors!

Platinum sponsor

Gold sponsors

Item sponsors
Registration and sponsorship opportunities are open for the 2020 ASBPA National Coastal Conference in October 13-16. For more information and the latest program, go to http://asbpa.org/conferences/. To register, go to http://www.cvent.com/d/l7qnnf.
Sponsorship options for National Coastal Conference still available

By KATIE BRUTSCHÉ, ASBPA Awards Chair

Students! For the 2020 National Coastal Conference, there are four opportunities to showcase your achievements through self-nominated awards: the Nicholas Kraus Coastal Scholar Award, the Student Educational Award, the James Houston Coastal Economics Scholar Award and the Student Coastal Advocate Award.

The Nicholas Kraus Coastal Scholar Award is given annually to a graduate student who aspires to advance his or her knowledge and experience of coastal or riverine science through an internship with ASBPA. The winner will become the dedicated staff member for the ASBPA’s Science and Technology Committee.

The ASBPA Student Educational Award is given annually to an undergraduate or graduate student who, through his or her research, is furthering the state of science of coastal or riverine systems as it relates to the goals and mission of the ASBPA. Any research pertaining to coastal or riverine science is eligible for consideration. The winner of this award is expected to present their research at the 2020 National Coastal Conference.

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The Student Coastal Advocate Award is presented to a graduate or undergraduate student who aspires to advance his or her knowledge of and experience in federal coastal policy and advocacy through an internship with ASBPA. The winner will become the dedicated staff member for the ASBPA’s Government Affairs Committee.

All four awards include a stipend. Submissions for all awards are due by Sept. 6 via electronic upload here (https://asbpa.org/2019/04/13/student-award-form/). More information on the 2020 National Coastal Conference can be found at http://asbpa.org/conferences/. Good luck!

Sponsorship options for National Coastal Conference still available

O
line sponsorships are a whole new world. While online sponsorships lack the in-person networking of a live conference, you can reach far more people and get a consistent message to everyone who sees your brand.

You will need to think about sponsorship branding and ads more like TV or internet ads, than signs at a conference.

Our options this year are simple: Platinum ($6,500 but it has been sold), Gold ($2,300), Silver ($1,800), and Bronze ($925).

Each sponsorship includes online ads at conference sessions, shout-outs at the conference, thanks in our newsletter and space in our virtual exhibit hall. Higher level sponsors receive additional advertisement options and extra registrations. Go to https://asbpa.org/conferences/ for more details.

Register for a sponsorship through the Conference registration, and choose “ASBPA Sponsor” for registration type. Register here: http://www.cvent.com/events/2020-asbpa-national-coastal-conference/event-summary-52d3d9b1e9eb425c96eab9e5264f2c88.aspx

If you have questions about sponsoring the 2020 National Coastal Conference, please contact managing@asbpa.org.

We’d like to thank our 2020 National Coastal Conference Sponsors to date:

• Great Lakes Dredge & Dock Co.
• Nortek
• Woods Hole Group
• Bureau of Ocean Energy Management
• Integral Consulting Inc.
• U.S. Geological Survey
• APTIM
• Taylor Engineering
• The Nature Conservancy
• City of South Padre Island
• National Wildlife Federation
• Manson Construction Co.
• HDR Engineering
• South Coast Engineers
• Texas Chapter ASBPA

• Moffatt & Nichol
• EA Engineering, Science and Technology
• Coastal Science & Engineering
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• RACE Coastal Engineering
• Coastal Protection Engineering
• Volkert, Inc.
• ATM
• City of Virginia Beach

Last call for student award nominations, deadline is Sept. 6

By KATIE BRUTSCHÉ, ASBPA Awards Chair

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Still time to sign up for CZF short courses

Coastal Zone Foundation announces two half-day short courses that can be registered for in conjunction with the ASBPA National Conference at https://asbpa.org/conferences/.

- **Tuesday, Oct. 20, “Water Quality,”** from noon until 4 p.m. led by Erin Hague (TetraTech). An introductory course where a review of the Clean Water Act of 1972 will be provided, along with discussions of surface water quality standards and compliance applicable to the Atlantic, Gulf and Pacific coastal zones. Case studies will review basin management tools, primary contributors to water quality degradation, Best Management Practices (BMPs) for treatment, monitoring strategies, bioindicators and state-level efforts at becoming compliant with the Coastal Zone Act. These topics will be discussed in three regional case studies: 1) Southern California Marina del Ray Toxic Total Maximum Daily Load (TMDL); 2) Southeast Florida Indian River Lagoon Basin Management Nutrient Criteria; and 3) Mississippi Gulf Coast Monitoring and Management of Non-Point Sources.

- **Wednesday, Oct. 21, “Coastal Geology,”** from noon until 4 p.m. led by Dr. Tiffany Roberts Briggs (Florida Atlantic University). Coastal Geology is an introductory course presenting a geological framework, distinguishing among types of coasts, the forces sculpting the land, and the sediments accumulating in distinct forms. This module will touch on special disciplines of coastal geomorphology, sedimentology, and coastal processes.

If you are unable to attend ASBPA conference and would like to sign up for a short course, please send an email to coastalzonefoundation@gmail.com and a PayPal invoice will be sent from Coastal Zone Foundation.

These courses are intended for coastal practitioners, professionals, consultants and representatives from government agencies and nongovernmental organizations. Students and new professionals are also encouraged to attend.

The short course topics are modules that will be offered in partial completion of the Certified Coastal Practitioner™ (CCP) program. The complete program will consist of 10 modules offering a broad, multidisciplinary platform of knowledge for current and prospective coastal professionals and providing an introductory look at the various areas of coastal expertise that are crucial to successful and sound coastal management. The basic objective of this program is to deliver the fundamentals of each topic applied in coastal management, so that individuals obtain exposure to a breadth of knowledge and expertise. Please visit https://coastal-zone-foundation.org/ccp-training/ for more information on the Certified Coastal Practitioner™ credential developed by Coastal Zone Foundation in cooperation with ASBPA. Most short courses are also available via recorded webinar.

The Coastal Zone Foundation was formed in 1984 with the purpose of advancing scientific and related engineering and planning knowledge. By developing and implementing the Certified Coastal Practitioner™ program, Coastal Zone Foundation is continuing a tradition of encouraging rigorous research and continued collaboration to nurture, protect and manage the coastal zone.

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Rosina named Certified Coastal Practitioner™

The Coastal Zone Foundation (CZF) is pleased to announce that Eric Rosina has earned the designation of Certified Coastal Practitioner™ (CCP) professional credential. Earning the CCP designation distinguishes Rosina as having a broad knowledge base and understanding of the interrelationships that exist among different coastal professions.

Rosina has been in the environmental industry for more than 21 years. Rosina is a graduate of Penn State University Earth Science Program and is the Director of Environmental Services for ACT Engineers in Newtown, PA, and Robbinsville, NJ. He is currently the Eastern Section Chair for PAEP and is a past Communications Chair for the NJ Chapter of the National Brownfield Association. Rosina has a diverse technical background, having worked in both the contaminant remediation and permit compliance sides of the environmental industry.

At ACT Engineers Inc., Rosina is responsible for the coordination of environmental due diligence requirements, personnel, site plan and state permitting for public and private development throughout New Jersey and Pennsylvania. Rosina has led remediation efforts which involved private water supply impact avoiding litigation and fostering trusting relationships between the Responsible Party and the down-gradient property owners and tenants. Rosina has also coordinated project permitting of numerous projects within Flood Hazard Areas and Wetland Areas across the state of New Jersey.
Put your coast on our cover:

ASBPA accepting entries for 2020 Photo Contest through Oct. 23

Are you planning to go to the coast in the next month? Will you take your camera or phone? Or have you gone to the coast anytime this year? We bet you took some great photos. Were they of the marshes? The beach? The bluffs? If so, submit them to ASBPA’s 13th annual Shore & Beach photo contest by Oct. 23. Your photograph could end up gracing the cover of Shore & Beach journal in its first issue of 2021!

The purpose of the contest is to highlight the beauty, variety and natural wonders of America’s magnificent coasts as part of celebrating more than 85 years of continuous publication of Shore & Beach by the American Shore & Beach Preservation Association (ASBPA).

Any photographs depicting the coast that you’ve taken since Jan. 1, 2019, are appropriate. These include bluffs, beaches, marinas, wetlands, marine life, recreational facilities, and engineered projects as long as they include the setting in which they were built (i.e. no portraits of dredges or your favorite coastal armorings).

Photographs can be full-color, black and white, sepia or colorized. Manipulated photographs (colorized, posterized, solarized, etc.) are also welcome if you briefly describe the changes or procedure. The original base photograph must have been taken by the submitter.

Categories for submission are all U.S. regions, states and territories: east coast, Gulf of Mexico coast, Caribbean (Puerto Rico, U.S. Virgin Islands), Pacific Coast (one category for U.S. mainland and Alaska and the other for U.S. Pacific Islands (e.g. Hawaii or Guam)

Winning photographs may be used as cover art on Shore & Beach. Therefore, VERTICAL-format photographs are highly preferred. Horizontal photographs can be submitted, too, but if a horizontal format photograph is a winner the editors of ASBPA may have to crop some of the scene, at their sole discretion, to fit on the cover of Shore & Beach.

Submit up to three photographs total in electronic files in JPEG, TIFF or BMP format to the following e-mail address: contest@ASBPA.org. Please send the full-size image file as created in your camera (note, minimum camera resolution of 3 megapixels to allow for sufficient printing quality for cover art) or a reduced-size file (800×600 pixels minimum). Winners will have to send the full-size file later.

What will we need to know from you in the text of the email? The basics:
1) Your name,
2) Physical address,
3) Email address,
4) Occupation and place of employment,
5) Photograph title or description,
6) Date taken,
7) Geographic Category (see list above),
8) Indicate if submission is full-size original or reduced size file for contest purpose.
9) Other notes if necessary (what is happening if it is an unusual scene, why you took the photograph, etc.).

Prizes are bragging rights: While Shore & Beach is not exactly the cover of Rolling Stone, it’s still not a bad deal for the amateur photographer to include in their resumé nonetheless.

Winner in each category will have his or her name and photograph printed in either Shore & Beach or the ASBPA’s “Coastal Voice” e-newsletter, or both. A Grand Prize winner will be selected from among the category winners to have his or her photograph printed on the cover of Shore & Beach and receive a one-year annual membership renewal to ASBPA.

Other entries of outstanding merit may be printed in “Coastal Voice,” Shore & Beach, or on the ASBPA website. All decisions by the ASBPA judges will be final and binding. Editors and officers of ASBPA will serve as the review and judging committee. For more details and a view of past winners from 2019, click here.
What's in your next Shore & Beach?

The next issue of Shore & Beach (Summer 2020, for those keeping score) offers a virtual tour around the Pacific, including:

- “Measuring historical flooding and erosion in Goodnews Bay using datasets commonly available to Alaska communities,” by Richard M. Buzard, Christopher V. Maio, David Verbyla, Nicole E.M. Kinsman and Jacquelyn R. Overbeck.
- “Toward improved coastal sediment management through coordination in California,” by Kristen A. Goodrich, Douglas A. George, Marc Beyeler, Phyllis Grifman and Nick Sadrpour.
- “Planning to adaptation: Informing regional nature-based adaptation to improve coastal resiliency in Santa Monica Bay,” by Phyllis Grifman, Melodie Grubbs and Karina Johnston.
- “Applicability of management guidelines for surfing resources in California,” by Edward A. Atkin, Dan R. Reineman, Jesse Reiblich and David L. Revell.

Also featured is a remembrance of Choule Sonu by Craig Leidersdorf and the latest ASBPA White Paper, “Best management practices for coastal inlets,” by Nicole Elko, Kimberley McKenna, Tiffany Roberts Briggs, Nicholas Brown, Michael Walther and Dawn York.

WASHINGTON REPORT

WRDA passes House, ASBPA supports BUDM and natural infrastructure

By DEREK BROCKBANK, ASBPA Executive Director

In late July, the House of Representatives passed H.R. 7575, the Water Resources Development Act (WRDA), by voice vote (indicating unanimous support). While the corresponding legislation in the Senate (S. 3591) has only passed the Environment & Public Works Committee, House and Senate staffers and key members from both chambers of Congress are working during the August recess to combine the two bills for a single conferenced bill that can be passed and signed by the president this fall.

ASBPA is working with partner Nongovernment Organizations (NGOs) to ensure the final WRDA includes the best provisions for beaches and coastlines from each bill.

Letters on WRDA

ASBPA joined with 15 conservation organizations to draft and send a letter to Congress asking for strong provisions on Natural Infrastructure: Joint Natural Infrastructure WRDA 2020 Conference Letter.

ASBPA also drafted and sent a detailed letter on regional sediment management and the beneficial use of dredged material: Beneficial Use of Dredged Material WRDA 2020 Conference Letter.

We expect to see a final draft of WRDA either in September or shortly after the election in November.
The Cardiff Beach Living Shoreline Project is serving as a pilot to better understand the engineering and effectiveness of nature-based approaches to shoreline protection in Southern California. The project takes an innovative approach to shoreline protection by mimicking natural beach-dune systems which accrete and erode with the seasons providing a natural buffer for critical infrastructure behind them. Construction was successfully finished in fall 2019. The project is the first Southern California project to test this unique nature-based solution for extreme coastal erosion problems.

The project’s primary goal is to provide a more resilient and adaptive solution to protect Highway 101 from coastal flooding. Highway 101 is a major coastal access and emergency evacuation route that has historically been damaged and flooded during periods of narrow beach widths, large wave events and high tides. Previously, the highway was protected by riprap that required frequent emergency maintenance and repair. With the project completed, there have been no incidences of wave overtopping, and no erosional issues along the dune face.

The project’s secondary goal was to restore native flora and fauna by creating rare dune habitat. Prior to the project, the site supported little to no native vegetation and wildlife habitat. Through habitat restoration, the newly constructed dune system supports a larger variety of native dune species, including beach sun cup (*Camissoniopsis cheiranthifolia*), Nuttall’s acmispon (*Acmispon prostrates*), beach sand verbena (*Abronia umbellate*), coast woolly heads (*Nemacaulis denudata var. denudate*), red sand verbena (*Abronia maritime*), and beach bur-sage (*Ambrosia chamissonis*). Once fully established, the dense vegetative cover will provide stabilization, keeping the sand in place to continue to provide soft armoring and providing habitat for wildlife.

A third goal involved improving pedestrian and beach access. Improving public access to and along Cardiff State Beach was a fundamental goal of the California Coastal Commission. With the project complete, an ADA-compliant pedestrian pathway runs parallel to the dunes and along Highway 101, improving the pedestrian connection from Solana Beach to Encinitas. Additionally, access from...
About the project:
- **Location:** Cardiff State Beach, Encinitas, California
- **Length:** The Cardiff State Beach Living Shoreline Project created a dune system, 60 feet in width and 2,900 feet in length.
- **Cubic yardage:** Project construction included constructing a buried rock revetment, a cobble berm using native cobble on-site, building sand dunes on top and in front of the rip-rap and cobble using native, marine sediment from the tidal inlet of the San Elijo Lagoon, and planting/seeding of the constructed sand dunes with native vegetation. Approximately 30,000 cy of sand was used to construct the dunes. The project was constructed immediately after 300,000 cy of sand was placed on Cardiff Beach from the construction of the San Elijo Lagoon Restoration Project. Dunes were created from marine-derived sediment from the San Elijo Lagoon inlet regular maintenance dredging.
- **Project timelines and quantities:** Construction began in December 2018, immediately after 300,000 cy of sand was placed on Cardiff Beach from the construction of the San Elijo Lagoon Restoration Project. Additional beach restoration to support the constructed dune system has not been necessary. Placement of the 300,000 cy of sand at Cardiff State Beach, in front of the project’s future footprint, was completed in April 2018 (Table 1).
- **Sponsors:** The project is grant funded by the California State Coastal Conservancy, Ocean Protection Council, U.S. Fish and Wildlife Service, and San Diego Association of Governments, and is being collaboratively maintained and managed by the City of Encinitas and California Department of Parks and Recreation.

**Cardiff**

- **Continued from page 9**

Parking areas to the beach is improved. There are now designated pathways and a Mobi-Mat that enable access for those with limited mobility, families and beachgoers with strollers or wagons.

**Design challenges**

The project consists of a 2,900-ft. long x 60-ft. wide dune system underlain by a reconfigured rock revetment berm and a cobble toe located along the seaward side of the dunes. The cobble toe provides the “first line of defense” to protect the dunes, and the rock revetment acts as the “last line of defense” for Highway 101 in case the cobble and sand dunes become compromised from storm events. To create the dune, 30,000 cy of sand from the dredging of the San Elijo Lagoon inlet was used. The dune hummocks were aligned and contoured based on natural dune morphology and dune reference sites in the region.

Though construction of the Cardiff State Beach Living Shoreline Project and the San Elijo Lagoon inlet dredging maintenance were coordinated and timed, nature did not fully cooperate. In January 2019, stockpiled sand from the San Elijo Lagoon inlet dredging maintenance to be used for revetment topping was lost to storm surge. A flurry of storms hit Southern California, bringing high surf conditions to the beach during king tides and a large portion of the stockpiled sand, approximately 3,000 cy, was lost to the extreme wave event.

To overcome this shortcoming, the Nature Collective and the City of Encinitas worked together to mobilize, dredge and stockpile sand in spring 2019, utilizing regularly scheduled maintenance dredging. Instead of placing the dredged sand in front of the Pacific Coast Grill as was usually planned and permitted (Table 1), an amendment to the permit was pursued and the sand was able to be used in the phased construction of the dune system. Two additional days of dredging were scheduled, which yielded approximately 4,000 cy of additional marine sediment for use in the southern dune construction area. Identify the issues influencing design.

The design came out of necessity. Prior to the project, flooding of Highway 101 was occurring more frequently, and the riprap used to protect...
Coastal Voice

Cardiff .................................
Continued from page 10

The highway needed to be restacked again. The consistent need to maintain this ineffective protection prompted the idea for an alternative plan. Relic dunes had recently been restored at the southern end of Cardiff State Beach, and the idea of constructing a dune in the place of restacking riprap was born.

The Nature Collective, the group that restored the southern dune at the southern end of Cardiff State Beach, looked to nature to design the restoration and native plant palette for the dune. Native seed was collected from the San Elijo Lagoon Ecological Reserve and nearby coastal areas in north county San Diego. Coastal scientists were summoned to weigh in on ways to capture sand and keep it in place while young plants took hold. Temporary sand fencing was designed and installed to stabilize the dune until plants adequately established.

The California Coastal Commission, an integral stakeholder and collaborator in the design process, requested and required improved beach access along the dune restoration project. Prior to implementation of the project, bikers and pedestrians shared a narrow bike lane adjacent to fast moving traffic and parallel beach parking. In the post-construction condition, a decomposed granite footpath runs adjacent to and along the western side of Highway 101 and dune system, connecting Encinitas and Solana Beach safely for bikers and pedestrians.

Six lateral public access points cross the proposed dunes, allowing pedestrians to access the beach from Highway 101 without compromising the dune health and plant development. Vehicle parking realignment on the west side of Highway 101, the relocation of an emergency access ramp to the beach, and the addition of an Americans with Disabilities Act (ADA) Mobi-Mat system to allow for direct access to the beach establish a unified and effective access program to the newly restored area.

Though the beaches are currently wide, as erosion persists the dunes are expected to gradually erode and require some supplemental sand, depending on the conditions. The dune design includes a 15-ft. wide, non-planted, sacrificial zone starting at the seaward edge of the dunes, which provides an erodible buffer for the dune habitat. The idea is that as this area becomes eroded, noted through meticulous monitoring, sand from the regularly dredged San Elijo Lagoon inlet can be dredged and placed at the toe of the dune slope, as needed.

While the Cardiff State Beach Living Shoreline Project is expected to be more resilient than the previous stacked riprap, the viability of the dune over time in response to sea level rise and extreme weather events still needs to be monitored and better understood. It is anticipated that the dune system will erode and require maintenance throughout its predicted 30-year lifespan, but due to its pilot nature, predicting specifics on how the dune will respond to extreme storm conditions poses a unique challenge.

To address this issue, a thorough Adaptive Management and Monitoring Plan was created, in collaboration with the City of Encinitas, State Parks and the California Coastal Commission. Physical and biological monitoring shall occur over the next five years to
Cardiff

Continued from page 11

assess dune performance, determining dune height changes, beach and nearshore sand volume fluctuations, frequency of overtopping, and vegetative cover and composition. Nearly all these evaluated parameters come with a threshold that must be met, or a corrective action will be triggered, such as augmenting the dune periodically using sand from the San Elijo Lagoon inlet dredging.

Construction methods

Innovative construction methods helped increase time efficiency and cost, enabled continued public access to the beach, and minimized impacts to adjacent sensitive species. Construction was broken into three different phases where each individual section was completed at a time in order to provide beach access and protect the largest community of over-wintering snowy plovers in the San Diego region. Because of this protected avian community, the city and project engineers worked with the U.S. Fish and Wildlife Service (USFWS) prior to and during construction to ensure that the sensitive species remained undisturbed during construction.

To minimize the need for imported rock, existing riprap along Highway 101 at Cardiff State Beach was excavated and reused, lowering the amount of imported rock needed for the buried revetment. Similarly, native cobble was extracted from the buried revetment trench and repurposed as a cobble toe at the seaward side of the revetment. Extracted cobble was in a sand/cobble mix; therefore, the contractor had to develop a system to screen the cobble onsite. The equipment used for this separation was placed on the beach in the staging area to enable consistent sorting of the materials as the revetment trenches were created and cobble and sand became exposed.

San Elijo Lagoon inlet dredging was purposefully coordinated with the construction of the dunes, to enable the re-use of dredged material to build the dunes. During the dredging event, trucks traveled from the lagoon inlet to the project site (approximately 0.5 miles) along the beach with traffic control providing safe conditions. Burying of the revetment and inlet dredging were meticulously timed. The dredged material was able to be stockpiled on the beach, within the footprint and staging areas, and could be immediately placed atop the revetment. Additionally, the project was also closely timed immediately after the San Elijo Lagoon Restoration Project (SELRP) nourished Cardiff Beach with 300,000 cy of sand. The nourishment directly benefitted the project by providing a wider beach, which has helped the coastal dune system by adding more sand to the system and keeping waves from running up the dune.

Funding

Funding required the formation of multiple unique partnerships to leverage resources towards a common goal. The project was collaboratively funded and designed by state and local partners, including the City of Encinitas, the Nature Collective, State Parks, California State Coastal Conservancy, California Coastal Commission, the University of California-Los Angeles

Continued on page 16

Table 1. Dredging location and placement

<table>
<thead>
<tr>
<th>Dredging location</th>
<th>Quantities (cy)</th>
<th>Dates</th>
<th>Deposition location</th>
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</thead>
<tbody>
<tr>
<td>San Elijo</td>
<td>10,000*</td>
<td>June 2020*</td>
<td>Cardiff State Beach — Intertidal placement in front of Pacific Coast Grill</td>
</tr>
<tr>
<td>Lagoon Inlet</td>
<td></td>
<td></td>
<td>Cardiff State Beach Living Shoreline Project (construction)</td>
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<tr>
<td>San Elijo</td>
<td>17,000</td>
<td>April 8-17, 2019</td>
<td>Cardiff State Beach Living Shoreline Project (construction)</td>
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<td>Lagoon Inlet</td>
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<td>Oct. 11-22, 2019</td>
<td>Cardiff State Beach Restoration Project</td>
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<td>San Elijo</td>
<td>13,000</td>
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<td>Lagoon Inlet</td>
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<td>San Elijo</td>
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<td>Lagoon Inlet</td>
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South Benson Marina beach nourishment project

By DEVIN J. SANTA, P.E., President, RACE Coastal Engineering, LLC

S
outh Benson Marina is a municipally managed marina located in Fairfield, CT, on the shores of Long Island Sound, and is one of the largest municipal marinas in the Northeast. The marina is accessed by way of a 100-ft-wide navigation channel that was in need of an economic and efficient means for dredging and dredged material management. The successful dredging of the channel and repurposing of over 27,000 CY of dredged material for beach nourishment purposes was completed in January 2020, by way of hydraulic dredging means. While common in the Southern United States, hydraulic dredging is much less common in the Northeast, and specifically Connecticut.

Among other things, the project accomplishments included:
1. Re-establishment of the 100-ft-wide navigation channel to historic depths so as to promote continued safe vessel access to the marina for public and first responder use
2. Economic on-site dredged material management manifesting in the beneficial reuse of over 27,000 CY of dredged material. The town saved significant dollars in unit price dredging costs allowing for near full scope of work to be completed on-site.
3. Successful state-listed plant and animal species management necessary for continued socioecological use of this coastal area.
4. On-site reuse of material meant no off-site hauling and limited construction vehicle traffic through a predominately residential neighborhood – dredging and beach nourishment was a one-stop-shop.
5. Increased recreational space on the beach and enhanced coastal flood protection to beach backshore areas.

To the best of our knowledge, the South Benson Marina Dredging and Beach Nourishment project was the first municipally funded dredging project of substantial size (> 25,000 CY) in the State of Connecticut to repurpose dredged material on-site for beach nourishment purposes.

As such, and because of the uniqueness of the work to the area, we believe this project has raised significant awareness to beneficial use of dredged material, and the benefits of restored beaches in the Long Island Sound region.

The Town of Fairfield, CT operates South Benson Marina, located at the mouth of Ash Creek, a tidal estuary on the North shore of Long Island Sound. The marina, which is open for public use, provides seasonal boat berthing for over 600 small craft vessels and sailboats. In addition, the marina provides long-term docking for the Town of Fairfield’s fire rescue, marine police, and conservation vessels, and has additional slip space for the Connecticut Department of Energy & Environmental Protection’s Environmental Conservation Police and U.S. Coast Guard auxiliary vessels.

The marina’s amenities include pump-out and fuel dock services, as well as vessel haul-out areas by way of multiple boat ramps. Upland areas are utilized for vessel dry-dock storage. There are picnic areas, and a skatepark, as well as a fishing pier located at the head of a stone jetty. Furthermore, the site is immediately adjacent to the Town maintained Jennings Beach which boasts over 2,000 feet of sandy beach shoreline for public use. The beach includes kayak and catamaran storage racks with an associated launch.

Continued on next page
Benson

Continued from page 13

area.

For all intents and purposes, South Benson Marina, and adjoining Jennings Beach, are the heart of recreational, water-dependent activity in the town and surrounding areas, not only during the summer, but all seasons of the year.

The marina is accessed by water by way of a 100-ft-wide navigation channel. Over time and as a result of coastal processes, the channel shoaled to a point where safe vessel transit to and from the marina was limited during periods of low water, requiring that a plan for dredging be developed.

In 2016, the Town of Fairfield contracted RACE Coastal Engineering (RACE) to perform a hydrographic survey of the marina and navigation channel and report on existing water depths, seabed characteristics, and potential dredging and dredged material relocation alternatives.

An additional survey of the offshore channel area was further conducted in 2017. The results of these efforts concluded that the navigable width of the channel had been reduced by more than half in some areas, while depths throughout remaining areas were also consistently 2-3 feet shallower, then the historic -8.0’ MLW depth. It was determined that upwards of 32,000 CY of material would need to be removed in order to re-establish the channel back to its historic depths and limits.

Given the quantity of material required to be dredged, an efficient and economic means for dredged material management was needed. Initial sediment sampling concluded that the infill material was primarily sand. RACE reviewed potential dredged material relocation alternatives including unconfined open-water disposal (consistent with historic activities onsite) and upland disposal.

While open-water disposal of dredged material has historically been performed for projects throughout Long Island Sound, it is highly regulated and considered a “last-resort” option. Projects greater than 25,000 CY are further taxed with expanded sediment testing requirements. Furthermore, the dredging, rehandling, dewatering, transportation, and placement of dredged material at an upland disposal site is very expensive and logistically complex.

With the close proximity of the channel to Jennings Beach, the project seemed to lend itself to the beneficial reuse alternative of beach nourishment. This alternative was not only believed to be economical given the scale and location of the project to the beach, but it also increased recreational beach space and enhanced coastal flood protection for backshore areas.

The Town of Fairfield had been looking at shoreline protection solutions for all of its waterfront from unusually high tides, future storms and predicted sea level rise. As such, the beach nourishment option fit perfectly with their overall coastal resiliency strategy, and the Town agreed to pursue this beneficial reuse alternative.

With a plan in hand, RACE prepared applications to the CT Department of Energy and Environmental Protection (CT DEEP) and U.S. Army Corps of Engineers (USACE) to secure the necessary state and federal permits to dredge the waterways and repurpose that material onto the Town's beach. As noted, dredged material from this project and many others throughout the state, has historically been bound for disposal at one of the two open-water disposal locations in Long Island Sound. Therefore, this management al-
ternative was uncommon for a dredging project in the State of Connecticut and, to the best of our knowledge, would be the first municipal project of substantial size (> 25,000 CY), in the State of Connecticut to repurpose on site dredged material for beach nourishment purposes.

During the regulatory process, it was determined that both state-listed plant and animal species could be impacted by the proposed work requiring that additional protective measures be implemented.

Species of concern included Federal and State endangered piping plover (*Charadrius melodus*), requiring that time of year restrictions be implemented and beach nourishment profiles incorporate adequate design features. Furthermore, and due to the significant accretion rate of a sand spit on the northside of the channel, areas formerly inundated had now become dry land and had begun establishing vegetation. Such vegetation included state-listed sand dropseed (*Sporobolus cryptandrus*), requiring that management of these species be performed prior to the start of dredging activities. RACE proposed actions to comply with State and Federal regulatory permit requirements and the Town was issued permission to proceed in the summer of 2019.

**Design & construction**

Following permit issuance, RACE completed final design drawings for the dredging and beach nourishment work and assisted the Town in a competitive bidding process to procure a dredging contractor. After a review of bids and following a thorough vetting process, Mobile Dredging and Video Pipe, Inc. (MDVP) of Chester, PA was ultimately selected to perform the work.

The MDVP work plan called for the mobilization of an Ellicott, floating, cutterhead suction-dredge to hydraulically dredge the material from the seabed and pump it, at times some 2,000 feet, onto the adjacent beach via a 10” pipeline. Dozers and other earth-moving track equipment would then distribute and grade the material to the design profile.

While commonplace to the South and Southeast U.S., hydraulic dredging is much less common in the Northeast, and more specifically the North shore of Long Island Sound, where most dredging is conducted by mechanical means such as a crane with clamshell bucket or excavator. This dredging process further contributed to the uniqueness of the work.

In late 2019, and prior to the start of dredging, RACE coordinated state-listed species surveys, stakeout, and transplantation activities so that work within the channel and on the beach could commence. RACE also conducted pre- and post-dredge hydrographic surveys and general construction administration during the work for quality assurance purposes and so that dredge volumes could be calculated for payment.

**Success & accomplishments**

The key project achievements include:

1. Restoration of the 100-ft-wide navigation channel to historic depths

Continued on next page
Continued from page 12

(Cardiff) (UCLA), Scripps Institution of Oceanography, GHD, and Moffatt & Nichol.

The City of Encinitas worked with project partners to secure funding for the design and construction with grants from the State Coastal Conservancy and the Ocean Protection Council. Additional supplemental funds came from the San Diego Association of Governments’ (SANDAG) mitigation fund and the USFWS. This project perfectly exemplifies how to overcome funding and capacity challenges by bringing together public agencies, nonprofits, academia, and private entities.

**Benchmarks of success**

The first annual monitoring and maintenance report for the project was recently completed in April 2020. Key takeaways from monitoring for nearly a year, indicate:

- The dune system has been found to be topographically stable (i.e., unchanged) during this monitoring period. This was the result of wave energy not approaching the dune owing to a wide beach and modest wave energy.
- Wind-blown sand is occurring, but its accumulation appeared insignificant during the monitoring period. Aeolian transported sand appears to be eroding from the top of the dune and accumulating on the downslope sides of the dune (adjacent to the pedestrian pathway and beach accessways).
- Concentration of land-based road runoff/drainage from Highway 101 during this monitoring period resulted in the creation of gullies within the beach access pathways and pedestrian path. The City repaired these gullies and is currently exploring ways to resolve these issues in the future.
- Western snowy plovers were observed using the created dunes and signs of potential nesting behavior were experienced.

### Project personnel:

1. **Project Managers**
   - Jayme Timberlake — Coastal Zone Program Administrator, City of Encinitas
   - Evyan Sloane — Project Manager, South Coast, California State Coastal Conservancy

2. **Dune Habitat Restoration Specialist**
   - Bradley Nussbaum — Restoration Director, Nature Collective

3. **Dune Design Engineers**
   - Brian Leslie — Senior Coastal Scientist, GHD
   - Conor Ofsthun — Project Engineer, Moffatt & Nichol

4. **Adaptive Management and Monitoring**
   - UCLA/Timu Gallien

5. **Construction Contractor**
   - West Tech — Construction Contractor Ben Engebretsen

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Continued from page 15

Benson to provide safe vessel navigation to South Benson Marina. The marina is one of the largest municipal boating facilities in Connecticut and the Northeast.

- Economic on-site dredged material management manifesting in the beneficial reuse of over 27,000 CY of dredged material. The Town saved significant dollars in unit price dredging costs allowing for near full scope of work to be completed on-site. To our knowledge, this is the first dredging with beach nourishment of substantial size (> 25,000 CY) in the State of Connecticut, which was entirely financed with municipal funds.

- Successful state-listed plant and animal species management necessary for continued socioecological use of this coastal area.

- On-site reuse of material meant no off-site hauling and limited construction vehicle traffic through a predominantly residential neighborhood – dredging and beach nourishment was a one-stop-shop.

- Increased recreational space on the beach and enhanced coastal flood protection to beach backshore areas.

It is important to note that while access to one of the largest municipal marinas in the Northeast was restored, over 27,000 CY of the dredged material was repurposed for beach nourishment purposes, allowing the Town of Fairfield to timely complete the work within budget. A project of this size and type is very unique in the State of Connecticut and the Long Island Sound region where dredged material has historically been disposed of offshore with no chance for beneficial reuse.

This project raised regional awareness for beach nourishment and other beneficial, dredged material reuse alternatives that are needed for future dredging work and sustainable sediment management practices.
The Texas Chapter of the American Shore & Beach Preservation Association had its fifth joint meeting on Aug. 18 via WebEx webinar with the Galveston District of the U.S. Army Corp of Engineers, who handles the entire Texas Coast. We usually have luncheon meetings but, due to the coronavirus pandemic, a webinar was necessary. After introductions by me on the ASBPA, the ASBPA National Conference “Navigating Stormy Times”, and Texas ASBPA Chapter, we heard from the Colonel for the Galveston District in how the USACE promotes Texas as the “Energy Coast” and discussed the upcoming $20 million Coastal Texas Study report that will be available in the Fall.

The Galveston Mayor Pro Tem gave welcome remarks; then we heard from seven Galveston District Army Corp managers on various coastal Texas projects including the Coastal Texas Protection and Restoration Feasibility Study, which is a proposed 84-mile defense system with estimated costs between $23 billion to 32 billion.

The meeting began at 1 pm and ended at 3 pm, and we had over 125 participants. The Texas ASBPA Chapter is very proud of the relationship we developed with the Galveston USACE over the years and they include us in their partnering and collaborating meetings with their stakeholders, which was held for two days following our meeting.

Everyone loves a good beach read (even if it is a technical report on coastal management)!

Here are some resources published this year by ASBPA and other coastal organizations on Covid-19, Resilience, and Funding. Whether you are reading at the beach or just about the beach, we hope you find these resources helpful.

**Funding:**
- **Local Funding for Coastal Projects: An Overview of Practices Policies and Considerations** by ASBPA
  - Report focusing on municipal level tools for raising revenue and ways to increase revenue with financial tools.
- **Federal Funding Opportunities for Flood Resilience: A Guide for Small Cities** by the American Flood Coalition
  - One-page overviews of federal and state funding options.

**Policy:**
- **WRDA Testimony** by ASBPA
  - Web post and linked full testimony of ASBPA’s President on committee questions.
- **Softening Our Shorelines: Policy and Practice for Living Shorelines Along the Gulf and Atlantic Coasts** by National Wildlife Federation (NWF) and the Coastal States Organization (CSO)
  - Report summarizing requirements and trends, making recommendations, and profiling relevant state policies for living shorelines.
- **Coastal Restoration Toolkit** by Restore America’s Estuaries (RAE) and National Oceanic and Atmospheric Administration (NOAA)
  - Website providing an introduction to coastline management techniques with in depth information on funding, permitting, flooding, coastal erosion, water quality, invasive species, and wild habitats.

**Managing COVID on the coast:**
- **Letter to Congress on Covid Stimulus** by ASBPA
  - Web post and linked letter asking for investment in coastal programs.
- **Dual Disaster Handbook** by the American Flood Coalition
- **Civil Engineering and Covid-19** by the American Society of Civil Engineers (ASCE)
  - Website listing online articles related to civil engineering and Covid-19 impacts.

Please inform your bookkeeping department that ASBPA has a new mailing address: 11940 Palba Way, #5102, Fort Myers, FL 33912-9094. Thanks!

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**CSO looking for Executive Director**

ASBPA’s partner and ally on policy issues and more, Coastal States Organization (CSO) is looking for a new executive director. CSO’s current executive director and good friend of ASBPA, Bradley Watson, is moving on for personal reasons at the end of the year. ASBPA will be helping CSO recruit an impressive, diverse, and competitive field of candidates for this important position. Interested? See more here: [http://www.coastalstates.org/careers/](http://www.coastalstates.org/careers/).