

NETWORK FOR ENGINEERING WITH NATURE

2024

PARTNER SYMPOSIUM

ST. AUGUSTINE, FL

MAY 22-24, 2024

DAY 1 – Wednesday, May 22

Registration, Name Tag Pickup

7:30 am – 8:00 am

Welcome Plenary, Setting Intentions, EWN Panel

*Christine Angelini (UF), Brian Bledsoe (UGA), Todd Bridges (UGA),
Jeff King (ERDC), Amanda Tritinger (ERDC)*

8:00 am – 10:00 am

Morning Break

10:00 am – 10:30 am

Poster Session

10:30 am – 12:00 pm

#	Lead	Institution	Title
1	Ada Agbogu	UGA	Evaluating the Impacts of Tidal Structures on Infrastructure Performance at Hunter Army Airfield (HAAF)
2	Matthew Campbell	NatrX	Advanced Technologies for Nature-Based Resilience and Restoration
3	Kailei Cao	UF	Dynamics of Florida Saltmarshes: Modeling Tidal Flow and morphological change
4	Lynette Cardoch	Moffatt & Nichol	Design of Resilience Infrastructure & Environmental Impact Bond City of Hampton, Virginia
5	Mark Clark	UF	Performance of three living shorelines impacted by Hurricane Idalia, Cedar Key, Florida
6	Jenny Davis	NOAA	Monitoring and Performance Evaluation of Nature Based Solutions
7	Matheus de Assis Bose	UF	Modeling The Influence of Ebb Tidal Delta Morphology on Longshore Sediment Transport Patterns during Hurricanes Along the North Florida Atlantic Coast
8	Carola Forlini	UF	A Numerical Investigation of the Effect of Boat Characteristics Parameters on its Generated Wake
9	Alejandra Gomez	UGA	Nature-Positive Infrastructure Development: Planning for Multiple Objectives and Design Opportunities in Georgia
10	Adam Hymel	UF	Tracking Habitat Change in Northeastern Florida Tidal Wetlands

11	Luciana Iannone Tarcha	UGA	Green Solutions for Gray Spaces: A Case Study of the Tietê River in São Paulo City, Brazil
12	Devyani Kar	Jacobs	Optimizing Holistic NbS for Climate Resilience
13	Hyun Dong Kim	UF	A Two-Phase Model Framework for Wave Attenuation by Submerged Flexible Vegetation
14	Jorge Laurel-Castillo	UF	Effects of Belowground Vegetation on Coastal Dune Erosion
15	Ting Liu	UA	Basin-Scale Modeling of Collective Management Practices in Agriculture to Reduce Sediment and Nutrient Inputs into Flood-control and Drinking Water Reservoirs
16	Sara Mason	Duke	Scaling Up Investment in Nature-based Solutions Using Green Banks
17	Mary-Margaret McKinney	Native Shorelines	Non-Profit/For-Profit Partnerships for Implementation of NBS at Scale
18	Robert Nairn	OU	Developing the Next Generation of Engineering With Nature Professionals: A Presidential Dream Course on Nature-Based Solutions
19	Alexa Ouellette	UGA	A Spatial Conservation Prioritization of Coastal Freshwater Impoundments Based on Predicted Climate Impacts and Waterfowl Habitat Value
20	Mindy Strevig	AnchorQEA	Integrating Landscape Architecture and Engineering Concepts to Foster Nature-Based Solutions
21	Caleb Sytsma	USACE ERDC	Evaluating the Equity of Greenspace Access for Infrastructure Planning
22	Craig Taylor	LimnoTech	NBS in the Trinity River Floodway
23	Charles van Rees & Seth Wenger	UGA	Re-Imagining Infrastructure for a Biodiverse Future
24	Danna Villarreal	UA	Assessing the Potential Role that Integrated Agricultural-Reservoir Systems Have on Water Quality
25	Oscar Villegas	UGA	Comparative Analysis of Estimated Longshore Sediment Transport Rates with River and Dredging Fluxes in the Savannah Harbor
26	Shu Wan	ASU	Spatiotemporal Causal Learning for Streamflow Forecasting
27	Chloe Wetzler	Duke	Challenges and Solutions for Permitting Coastal Nature-Based Solutions
28	Elissa Yeates	UGA	Quantifying the increasing flood risks produced by legacy levee systems

Lunch

12:00 pm – 1:00 pm

1:00 pm – 1:15 pm Room transition

Track 1 – Concurrent Talks (1.5 hours)

1:15 pm – 2:45 pm

1-A NBS Policy and Planning	1-B Wetlands	1-C EWN and Rivers
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Moderator: Matt Shudtz, UGA <i>Ponce de Leon</i>	Moderator: Lee Marlowe, SARA <i>Anastasia</i>	Moderator: Shaun Donovan, SARA <i>Coquina</i>
Yee Huang and Katie Foster, UGA Legal and Social Components of Nature-Based Solutions: The Example of Levee Setbacks	Joseph Berg, Biohabitats Sand Seepage Wetlands as a Way to Increase Our Wetland Inventory and Improve Our Surface Water Resources	Collen Brownlow, SARA Bank Stabilization Using Natural Channel Design Along the San Antonio River
Billy Johnson, LimnoTech Planning and Designing with Nature Based Solutions	Mohamed Gaballah, UGA Developing a Numerical Model to Predict the Nutrient Removal from Borrow Pits Wetlands in the Middle Missouri River Basin	Cheyenne Morgan, OU Hydrologic Controls on Phosphorus Dynamics Within Legacy Sediment Floodplains
Megan Kelso, UC-SC Opportunities to Protect People, Property, and Nature by Connecting Insurance, Risk Science, and Nature-Based Solutions	Amanda Ludlow, Stantec Reinventing Nature-based Solutions for Treatment of Domestic Wastewater	Laura Naslund, UGA Short Burps, Tall Trees: Trajectories of Landscape Carbon Balance After Dam Removal
Chris Levitz, AECOM A Resilient Texas Coastline – Aligning Our Natural and Built Infrastructure for the Future	Yoonhyuk Choi, ASU Identifying Potential Sites for Wetlands via Causality-Based Data Imputation and Knowledge Transfer	Hailey Seago, OU Modeling <i>Arundinaria gigantea</i> (Giant Rivercane) as a Culturally Important Nature-Based Solution for Riparian Area Restoration
Victoria Salgado, AECOM Nature-Based Solutions as a Pathway to Equitable Risk Reduction from Climate Hazards	Elizabeth Guthrie, Ducks Unlimited Optimizing the Natural Infrastructure Benefits of Conservation and Restoration	Lauren Melendez, USACE ERDC Development of an Eco-Hydrology Design Tool
Afternoon Break 2:45 pm – 3:15 pm		
Track 2 – Concurrent Tracks (1.5 hrs) 3:15 pm – 4:45 pm		
2-A Biodiversity Panel + Lightning Talks Moderators: Seth Wenger & Kyle McKay <i>Ponce de Leon</i>	2-B Marshes, Living Shorelines, and Sediments Moderator: Jan Mackinnon, GA DNR <i>Anastasia</i>	2-C BCA and Economics Moderator: Matt Chambers, UGA <i>Coquina</i>
Opportunities for biodiversity conservation in mainstreaming Natural Infrastructure and Nature-based Solutions A panel to stimulate conversation for a broad, horizon-scan discussion around opportunities and priorities for biodiversity conservation research and practice presented by the wave of funding and support for NbS	Meghan Angelina, GA DNR Smoothing the Path to Resilience through Georgia's Living Shorelines	Craig Landry, UGA Economic Value of Green Infrastructure Investments on the Georgia Coast
	Britney Hay, UF Predicting the Outcomes of Sediment Addition in Florida's Changing Coastal Landscape	Bertrand Lemasson, USACE ERDC A Place for Structural Causal Modeling in Quantifying the Ecological Costs and Benefits of Nature-Based Solutions in Aquatic Systems

research. Ideally, this will include audience participation and catalyze ongoing collaborations for integrating biodiversity goals with NbS implementation and development.		
Panelists: S. Kyle McKay (USACE EWN), Matt Schudtz (UGA IRIS), Katie Foster (UGA IRIS), Tim Dekker (LimnoTech), Shaun Donovan (San Antonio River Authority)	C. Rhett Jackson, UGA Sediment Budgeting to Support Beneficial Use Planning and Sustainability Assessment	Ali Meek, OU An Applied Evaluation of Ecosystem Services Decision-Support Tools
Laura Cherney, AECOM Reefense – Realizing the Potential of Hybrid Reefs	Gregg Moore, UNH Accreting Evidence: How a Natural Sediment Event and a Thin Layer Placement (TLP) Study Led to Similar Conclusions in Two New England Salt Marshes	Maor Bezner, EConcrete Port of San Diego: An Example Cost Benefit Analysis for Nature Inclusive Design Approaches within Port Infrastructure
Daniel Coleman, UGA Quantifying the Impacts of Future Shoreline Modification on Biodiversity		
Abel Porras, City of Austin A holistic modeling approach to decode hydrology and ecology in urban watersheds		
Lee Marlowe, SARA Inspiring Biodiversity Conservation and Stewardship Using Simple Techniques to Monitor Outcomes of Urban Nature-based Infrastructure Projects	Kiran Adhithya Ramakrishnan, UF Process-Based Model of Salt Marsh Coupled Dynamics Highlighting the Physical Drivers of Vulnerability	Josh Running, Stantec Nature-Based Solutions for CCR Closure
Burton Suedel, USACE Promoting Coastal Bird Biodiversity in Coastal Louisiana Using Dredged Sediments from Baptiste Collette Bayou		
Mike Beck, UC-SC Global Fragility and Resilience of Coral Reefs to Tropical Storms Under Climate Change		

Transition to Social Hour

4:45pm – 5:15pm

Networking Happy Hour on Rooftop

5:15pm – 7:15pm

DAY 2 – Thursday, May 23

Track 3 – Concurrent Panels (55 minutes) 8:00 am – 8:55 am		
3-A Regulatory Best Practices Panel Lead: Matthew Shudtz, UGA <i>Ponce de Leon</i>	3-B AG and EWN Panel Lead: Rebecca Muenich, UA <i>Anastasia</i>	3-C Resilience and Adaptation Panel Lead Chris Levitz, AECOM <i>Coquina</i>
Progress report - Multi-jurisdictional research on regulatory best practices to promote Engineering With Nature Our panel will share findings from ongoing research and regulatory reform activities related to permitting infrastructure projects that incorporate natural and nature-based features. <u>Panelists:</u> Michelle Covi, Yee Huang, Colette Cairns, Kyle McKay	Integrating Agriculture to Advance the Next Frontier of Engineering with Nature A discussion with leading experts on the need, opportunity, and challenges to integrating agricultural systems to scale NBS. <u>Other Organizers:</u> Todd Bridges, Ting Liu <u>Panelists:</u> John Sabo, Brian Bledsoe, Bob Nairn	Building Tomorrow's Resilience: AECOM's Pathway to Climate Adaptation and Natural Infrastructure Integration This panel is about AECOM's forward-looking approach to climate resilience and adaptation in the US, focusing on the integration of natural infrastructure solutions. The discussion will delve into the evolving strategies, constraints, and opportunities shaping AECOM's journey towards sustainable, equitable, and resilient futures. <u>Moderator:</u> Anne deBoer <u>Panelists:</u> Chris Levitz, Marisa Escobar Arias, Shane Parson, Lauren Swan
8:55 am – 9:05 am Transitional break between panels		
Track 4 – Concurrent Panels (55 minutes) 9:05 am – 10:00 am		
4-A NI for Shorelines Panel Lead: Daniel Coleman, UGA, <i>Ponce de Leon</i>	4-B Education Panel Lead: Lori Han, OU <i>Anastasia</i>	4-C N-EWN's Newest Lead: Todd Bridges, UGA <i>Coquina</i>
Identifying and Overcoming Obstacles to the Implementation of Natural Infrastructure for Shoreline Modification A panel discussion on the obstacles to implementing living shorelines (and other coastal NI) and how might we overcome them.	EWN/NBS Educator Panel: Lessons Learned and Future Directions The proposed panel will be a guidance discussion on education in the EWN/NBS space. The panel will consist of members who currently teach EWN/NBS courses in higher education from across the country and within a variety of contexts	Learn what our newest members are doing and how their work intersects with N-EWN's mission. This panel will provide an opportunity for some of our newest partners to introduce themselves. <u>Panelists:</u> Mary-Margaret McKinney, Native Shorelines; Chris Allen, Jacobs; Chris Mack, Moffat & Nichol; Walter

Panelists: Brock Woodson, Craig Landry, Matt Shudtz, Savanna Barry	(engineering, ecosystem restoration, social science, etc.). Question-answer discussion will be centered on coursework and programmatic development and teaching such content in the classroom and field. Panelists: Bob Nairn, Kyle McKay, Jane Smith	Dinicola, AnchorQEA; Matthew Berg, Simfero; Matt Campbell, Natrx; Maor Bezner, EConcrete
Morning Break 10:00 am – 10:30 am		
Track 5 – Concurrent Talks (1 hr, 15 min) 10:30 am – 11:45 am		
5-A NBS Policy and Scaling Moderator: Sara Mason, Duke <i>Ponce de Leon</i>	5-B Coastal Dune Communities Moderator: Amanda Tritinger, USACE <i>Anastasia</i>	5-C Flood Modeling Moderator: Anouk Savineau, LimnoTech <i>Coquina</i>
Michael Beck, UC-SC Taking Nature-Based Solutions to Scale: What's Next?	Pete Adams, UF Temporal and Spatial Variability of Cross-shore Fetch and the Potential for Aeolian Dune Recovery at Anastasia Island, FL	Lina Cardenas Caro, UGA Compound Flood Modeling for Coastal Military Defense Communities
Trevor Meckley, NOAA Advancing Science to Enable Nature-Based Solutions That Move Past Short-Term Considerations, Small-Scales, and Holding the Line	Hallie Fischman, UF Leveraging Natural Succession to Improve Sand Dune Restoration	Matt Chambers, UGA Modeling the Service Potential of Green Stormwater Infrastructure in Urban Coastal Communities
Lydia Olander, Duke Federal Progress on Accelerating Deployment of Nature-Based Solutions	Joseph Morton, UF Strategic Planting and Nutrient Amendments to Accelerate the Revegetation of Rapidly Retreating Coastal Dunes	Felix Santiago-Collazo, UGA Combining Riverine and Coastal Natural Infrastructure for Reducing Compound Flood in Estuary Systems
Katie Warnell, Duke Accelerating Nature-based Solutions Implementation: A Roadmap for the Department of the Interior	Amanda Tritinger, USACE ERDC Coastal Dune Processes and Management	John Sabo, Tulane Design Principles for Engineering Wetlands to Improve Resilience of Coupled Built and Natural Water Infrastructure
11:45am – 11:50am <i>Transitional break before lunch</i>		
Lunch 11:50 am – 12:50 pm		
Track 6 – Concurrent Tracks (1 hr, 15 min) 12:50 pm – 2:05 pm		
6-A Flood Planning Moderator: Anouk Savineau, LimnoTech	6-B Engagement for EWN Moderator: Ben Carswell, UGA <i>Anastasia</i>	6-C Hydrodynamic Modeling Panel Lead: Matthew Bilskie, UGA <i>Coquina</i>

<i>Ponce de Leon</i>		
Matt Chambers, UGA Toward Mainstreaming Nature-Based Solutions in Federal Flood Management Infrastructure By Improving the Accounting of Benefits in Investment Decision-Making Tools	Laura Castro-Diaz, ASU Assessing the Social Suitability of Managed Aquifer Recharge	Hydrodynamic Modeling to Support Nature-based Solutions in the Coastal Zone This session will highlight activities on using coastal numerical and sediment transport models to aid in the feasibility, design, implementation, and performance assessment of NbS. The session will discuss modeling improvements necessary for NbS design and implementation across large scales for wave and water level attenuation. Panelists: Amanda Tritinger, Soupy Dalyander, Aditya Gupta, Xiao Yu, Trevor Meckley, Brock Woodson
Kyle McKay, USACE ERDC Accelerating Use of Hybrid Infrastructure Systems in Water Resources	Isabella Gandara, AECOM Branching Out: NNBS Accessibility for All Stakeholders	
Daniel Siegel, Earth Genome A CONUS-Wide Assessment of the Best Locations for Managed Aquifer Recharge Using Floodwater (FloodMAR)	Robert Nairn, OU Working Together: The Crucial Role of Local Partnerships in Implementing Successful Nature-Based Solutions	
	Brian Zettle, USACE TNTCX Including Tribal Perspectives, Treaty Rights, and Knowledge in Restoration	
<i>2:05 pm – 2:15 pm Transitional break before plenary</i>		
Closing Plenary 2:15 pm-2:40 pm		
<i>2:40 pm – 3:00 pm Dismiss to Field Trips</i>		
Field Trips 3:00 pm-5:00 pm		

DAY 3 – Friday, May 24

8:00 - 9:15	N-EWN Advisory Committee <i>Coquina</i>
9:15 am-9:30 am <i>Short break</i>	
9:30 - 10:45	N-EWN Advisory Committee <i>Coquina</i>
10:45 am-11 am <i>Short break</i>	
	Biodiversity Working Group (open to all) [Leads: Charles Van Rees, Seth Wenger, Kyle McKay] <i>Coquina</i>
11:00 - 12:30	Development of a biodiversity scorecard The ability to effectively account for the biodiversity impacts of infrastructure projects within the planning and decision-making stages is critical to achieving resilient and sustainable infrastructure development, particularly where such projects have the potential to enhance, rather than reduce, biodiversity. Efforts to adequately consider biodiversity outcomes in infrastructure decisions and/or monitor the biodiversity impacts from various developmental activities remain scarce or ineffective. With the anticipated infrastructure boom, a holistic framework that can enable the effective consideration of biodiversity impacts in infrastructure decisions remains a foundational data gap. Recognizing the importance of accounting for biodiversity within infrastructure decision-making, we propose a Biodiversity Infrastructure Scorecard framework aimed at evaluating or scoring infrastructure projects based on their positive or negative impacts on biodiversity. This session will explore the development of a scorecard and ask participants to critique and guide ongoing research on the topic.

Find more information, including abstracts,
location info, and attendee profiles at
N-EWN.org/Partner-Symposium

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