

Successful Implementation of Coastal Resilience Practices through a Unique & Productive For-Profit & Non-Profit Collaboration

40 YEARS North Carolina Coastal Federation
Working Together for a Healthy Coast

NATIVE SHORELINES



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Living Shoreline Division of Restoration Systems, LLC

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Good Morning, My name is Mary-Margaret McKinney and I am Director of Coastal Restoration for Restoration Systems' living shoreline division, Native Shorelines. With me today is Todd Miller, the Executive Director of the North Carolina Coastal Federation, our amazing non-profit, coastal environmental advocacy partner.



So, we all know what the issue and it will be talked about it in many sessions throughout this week - ever increasing coastal erosion and property loss from storms, land-use changes, sea level rise, and other events. The need to protect and preserve our shorelines has never been greater.

THE SOLUTION:
LIVING
SHORELINES



OLD WAY

Bulkheads &
Sea Walls



BETTER WAY

Living Shorelines

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The traditional way of managing this issue was to harden the shoreline with bulkheads and seawalls. While hardened shorelines work in the short-term to reduce coastal erosion, they eventually destroy natural marsh and oyster habitat and simply shift the problem from one property or area to another. They also frequently fail, resulting in costly repairs and debris littering the coast after storms.

Researchers from East Carolina University and the University of North Carolina at Chapel Hill evaluated the performance of living shorelines and bulkheads at preventing erosion following Hurricane Irene, a Category 1 hurricane that came ashore at Cape Lookout, North Carolina in 2011 with 85 mph winds. The study, which was published in *Ocean & Coastal Management* in 2014, found that 76% of bulkheads surveyed were damaged, while no damage to natural marsh or living shoreline offshore sills was detected.

Living shorelines, of course, have been found to attenuate wave energy instead of reflecting it. In turn, accreting sediment and preventing erosion that causes marsh sloughing and carbon release.



But as we all know, HAVING a solution does not equal implementation of that solution. Private landowners still overwhelming choose to harden their shorelines.

Widespread private buy-in to living shoreline stabilization over traditional hardened methods is hindered by limited landowner education and the subsequent landowner reticence to pay for a shoreline stabilization method that is new to them. Programs that both increase education and incentivize installation can significantly ameliorate these barriers to scaled implementation.

THE ISSUES:

- Landowners are often unaware that they have options for shoreline stabilization
- Many landowners are unwilling to pay a market-based price for what they perceive as a novel approach



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So let's take a closer look at these issues.

The first is education. Landowners need to know that they have options for shoreline stabilization. Living shoreline proliferation is severely hampered by a lack of education on the part of landowners, developers, and building contractors. People want why they see and what they know. So until living shorelines make up a greater percentage of shoreline stabilization projects than they currently do, education is key.

Secondly is cost: not only are many landowners unwilling to pay a market-based price for what they perceive as a novel approach, most of the first living shorelines were installed at very little or no-cost to the landowners as research. So if a landowner does know someone with a living shoreline, odds are they were told that it cost that person almost nothing to install. This means that skilled contractors have little ability to develop and maintain a robust living shoreline service at a profit.

THE ISSUES:

- Grant and legislative funds available for cost-share programs are primarily directed to non-profit entities
- These entities typically rely heavily on volunteer implementation of projects



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In many cases, there ARE funding opportunities available for both education and project cost-share.. However, the grant and legislative funds typically available are primarily directed to non-profit entities. While these entities typically have a history of successful coastal advocacy they usually rely heavily on volunteer implementation of projects - a reliance that does not lend itself to widespread implementation of projects. Not to mention that fact that the COVID-19 pandemic severely hampered or in some cases completely shut-down volunteer efforts.

For profit entities with the structure, staff depth, and experience to implement large-scale construction projects in a timely fashion are typically expressly excluded from applying for these funds or prevented from including profit in their funding requests.



For-profit/non-profit collaboration can leverage the resources of both entities to promote living shorelines and implement their use confidently & successfully.

So to that end, the North Carolina Coastal Federation joined forces with Native Shorelines on a mission to achieve widespread living shoreline implementation on the central North Carolina coast.



To date, by working together, we have leveraged over $1.4 million in less than 3 years to permit and construct over 4 miles of living shorelines in North Carolina on over 100 sites. This does not include funds and projects the Coastal Federation has completed with other for-profit contractors that increases all of those numbers.

We have secured an additional $8 million of funding for work to be completed over the NEXT 3 years by Native Shorelines and other contractors.

We would like to talk to you today about how we have developed and implemented this successful program.

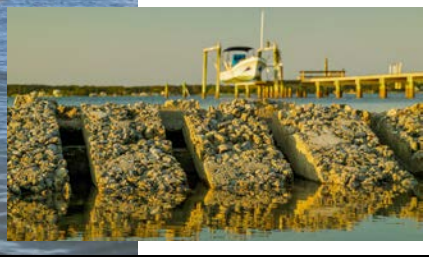


Most importantly, the key to the success of our partnership has been one thing. We both have the same goal: the proliferation of living shorelines!

Every time a living shoreline goes in instead of a hardened shoreline it helps our coast, improves our education mission, and increases word of mouth and ultimately, as a living shoreline contractor, that improves my bottom line. So while of course, it would be great for us if every project was a Native Shorelines project, it is more important for the mission that the materials and methods appropriate for a site are used so that the landowner is happy and the project is successful. We are partners with the Federation in this effort, not exclusive salesman of some description. At no point are only Native Shorelines products and services offered to landowners, the Coastal Federation regularly contracts with other for-profit contractors, AND landowners are given the options for do-it-yourself projects as well. This allows the Federation to confidently partner with us knowing we will recommend what is best for the site.



Joint educational and strategic communication clearly sends the message that the Federation endorses living shorelines, while Native Shorelines' (and our parent company Restoration Systems') history of successful implementation of environmental restoration projects ensures that projects are designed, permitted, and installed in a timely manner.



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And that helps the education process. Joint educational and strategic communication clearly sends the message that the Federation endorses living shorelines, while Native Shorelines' (and our parent company Restoration Systems') history of successful implementation of environmental restoration projects ensures that projects are designed, permitted, and installed in a timely manner. Further, when cost-share funds are obtained from legislative allocations, it sends the message to coastal landowners that the State of North Carolina supports and promotes living shorelines.



Which leads to the second key to this successful partnership: collaboration and teamwork. From grant writing thru project installation, staff from the Federation and Native Shorelines collaborate on all project aspects, each lending their individual strengths to the combined effort.

On the front end, this means collaborating on project identification, legislative agendas, and grant writing to achieve project funding.

Once funding is acquired it means contacting landowners, performing joint site visits, working together to develop conceptual plans, identifying and procuring additional outside funding when necessary, permitting, construction, and monitoring.

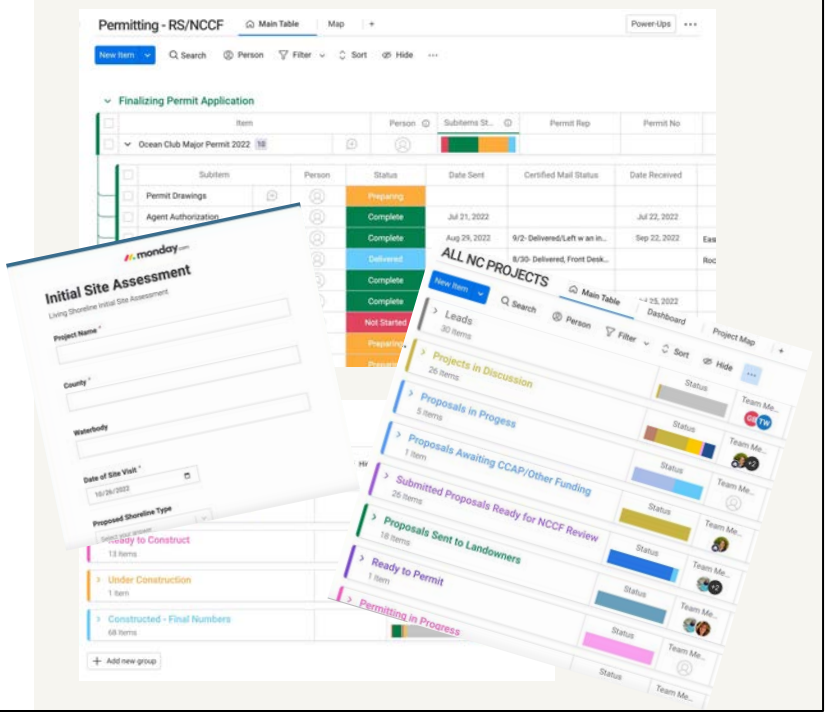
Performing all of these tasks together ensures greater success than either one of us could achieve on our own.

THE SOLUTION:
Collaboration

From grant writing thru project installation, staff from the Federation and Native Shorelines collaborate on all project aspects.

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To manage the overwhelming response to the cost-share program (we currently have 247 projects in some stage of progress, not including potential project leads). The Federation obtained a Monday.com subscription and we built a living shoreline specific database from the ground up. We can track the progress of every project from the moment of client contact to completion including every contact point and permit application item, construction dates, and billing. Additionally, the Federation can track grant allocation for funding reports. Development of this database took well over 500 team hours but management of all aspects of this many projects without it would be untenable. We also built a living shoreline site assessment form that is filled out on every site visit and feeds automatically into the database.



And finally, but not at all least, acquired cost-share funding means that landowners are more likely to install a living shoreline due to significantly reduced out of pocket cost for them while the overall project pricing can be kept at a level that allows skilled contractors to develop a robust service business with staff, equipment, and the capital for overhead expenses and upfront costs, allowing for the creation of jobs and a living shoreline industry, ultimately giving back to the local economy and the state and local tax base.



To provide you a case study example of a project that simply could not have been completed without this partnership, this is the McGinnis Point subdivision in Pine Knoll Shores, North Carolina.

It is a neighborhood of townhouses, condominiums, and single-family homes on a barrier island on the Bogue Sound. Several years ago, the Coastal Federation and Native Shorelines installed a single living shoreline at the western-most end of the neighborhood. That is the property shown here with the green line along the shoreline.



As you can see from these pictures, the neighborhood was experiencing significant erosion and actively losing all of their fringing marsh. Protecting one property at a time, while helpful, was not what was needed. The entire neighborhood needed a living shoreline. But convincing 14 single-family homeowners and 2 separate HOAs to all install a living shoreline at the same time was not going to be an easy task. Further, the entire project totaled 1,500 linear feet and once permits were in place, there would only be 120 days to complete the project. This was not a job for volunteers.

Our first meeting on the project was with the President of one of the HOAs and the landowner who already had a living shoreline. The HOA president was on-board but she knew the cost was going to be significant and a major deciding factor for many homeowners.

That first meeting led to additional meetings on nights and weekends, in person and on zoom, with all of the HOAs and landowners reviewing conceptual plans. Our scientists walked the shoreline, mapped the potential alignment, and made map after map. We and the Coastal Federation answered dozens of questions. In the end, the design that was chosen had an estimated total project cost of just under $215,000. The Coastal Federation had various cost-share funds available but in no case, could they cover more than 50% of the total project cost. That still left a bill of over $100,000 for the HOAs and homeowners. A price tag that was still a hard sell.

McGinnis Point
Pine Knoll Shores, NC

First Meeting - November 2021

Funding Secured - July 1, 2022

Permitting Started - July 15, 2022

Permits Acquired - Aug - Oct 2022

Constructed - Oct & Nov 2022



As luck would have it, the Federation was not the only group to receive larger than normal cost-share funds this year. The Community Conservation Assistance Program also received a much larger than typical allocation of funds for living shorelines. Together, we convinced the local officials of the need for this project and they went to bat for it in their own competitive process.

That first meeting in the home of the HOA President was in November 2021.

Cost-share funding for the project was awarded July 1, 2022 and we started permitting all 16 properties on July 15.

Construction began in mid-October and was completed in less than a month.



Final cost to the landowners for 1,500 contiguous feet of linear shoreline? Just under $35,000!! And to make this project even better, it ties into another living shoreline on county property for a total living shoreline length of over 2,000 linear feet. That is what non-profit/for-profit collaboration can do to improve coastal resiliency.

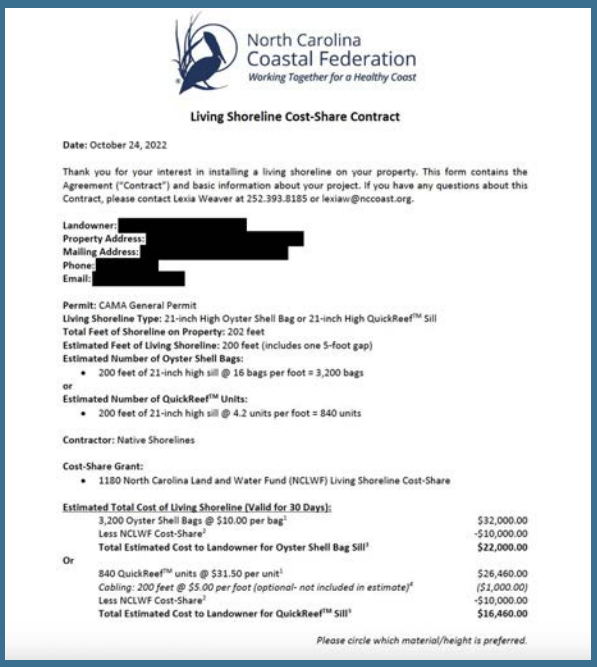
And last, but absolutely not least, one of the most important benefits of the way the partnership has really facilitated this work comes back to that $35,000 out-of-pocket cost to landowners.

THE SOLUTION: Collaboration

Our fully collaborative partnership means that we are able to have a true cost-share program in NC, vs a reimbursement program

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Living Shoreline Cost-Share Contract

Date: October 24, 2022

Thank you for your interest in installing a living shoreline on your property. This form contains the Agreement ("Contract") and basic information about your project. If you have any questions about this Contract, please contact Lexia Weaver at 252.393.8185 or lexiaw@nccoast.org.

Landowner: [redacted]
Property Address: [redacted]
Mailing Address: [redacted]
Phone: [redacted]
Email: [redacted]

Permit: CAMA General Permit
Living Shoreline Type: 21-inch High Oyster Shell Bag or 21-inch High QuickReef™ Sill
Total Feet of Shoreline on Property: 202 feet
Estimated Feet of Living Shoreline: 200 feet (includes one 5-foot gap)
Estimated Number of Oyster Shell Bags:
- 200 feet of 21-inch high sill @ 16 bags per foot = 3,200 bags

or
Estimated Number of QuickReef™ Units:
- 200 feet of 21-inch high sill @ 4.2 units per foot = 840 units

Contractor: Native Shorelines

Cost-Share Grant:
- 1180 North Carolina Land and Water Fund (NCLWF) Living Shoreline Cost-Share

Estimated Total Cost of Living Shoreline (Valid for 30 Days):

3,200 Oyster Shell Bags @ $10.00 per bag[1]	$32,000.00
Less NCLWF Cost-Share[2]	-$10,000.00
Total Estimated Cost to Landowner for Oyster Shell Bag Sill[3]	**$22,000.00**
Or	
840 QuickReef™ units @ $31.50 per unit[1]	$26,460.00
Cabling: 200 feet @ $5.00 per foot (optional- not included in estimate)[4]	*($1,000.00)*
Less NCLWF Cost-Share[2]	-$10,000.00
Total Estimated Cost to Landowner for QuickReef™ Sill[3]	**$16,460.00**

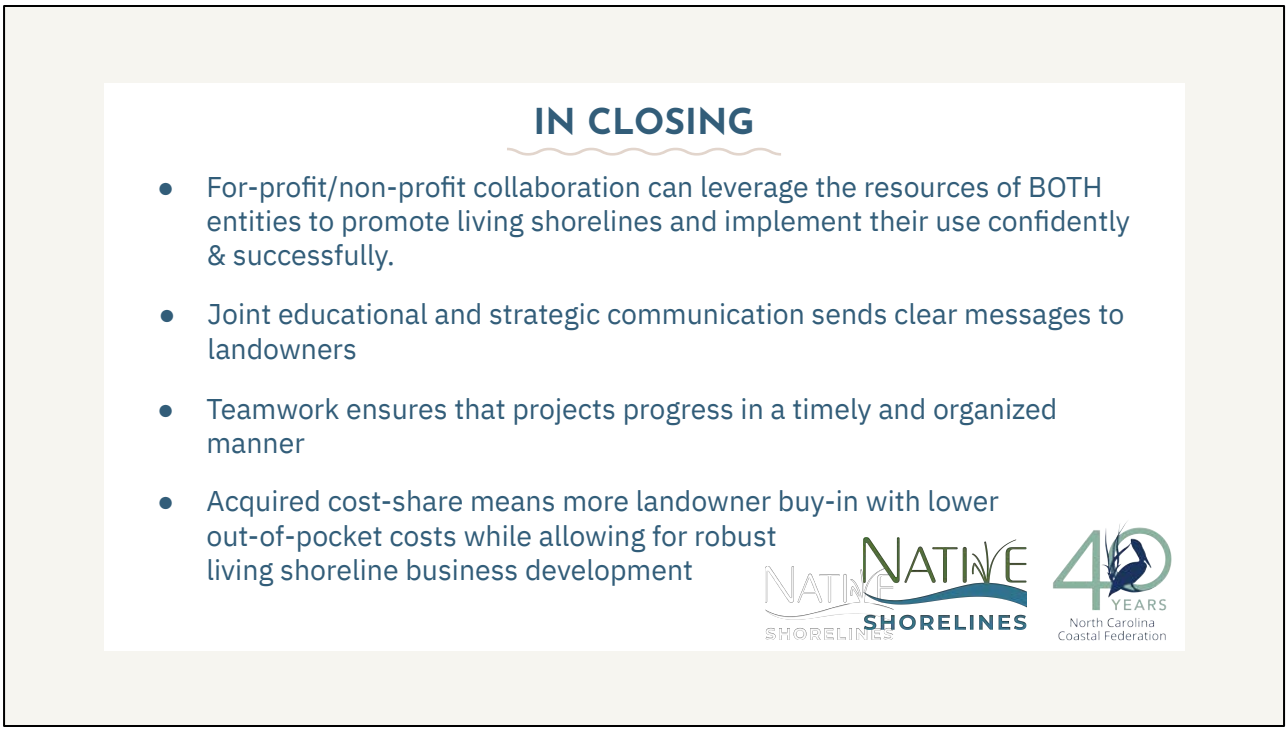
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Our collaborative partnership is a true cost-share is not a reimbursement program, as many cost-shares actually are.

Once landowner decides they would like to proceed with a Native Shorelines' product and service, we provide sign our contract with the Coastal Federation, not the landowner. The landowner is the Federation's client and the Federation is our client.

This allows the Coastal Federation to take the cost-share funds off the project cost to the landowner. So in the McGinnis Point example, the landowner did not have to upfront $215,000 and wait for reimbursement of $180,000 of that. Their actual project cost was $35,000.

This is huge! Particularly for socio-economically disadvantaged landowners or others without the resources to pull on the full cost and wait for reimbursement. But it also really tips the scales for many landowners in general having a lower out the door price point. It is worth noting here, that with a living shoreline, unlike a bulkhead, landowners are funding a coastal resiliency project on state-owned bottom where they landowners do not own nor control the land (unlike with a bulkhead). So as both the landowners and the state are receiving benefits, it follows that cost-sharing of living shorelines is appropriate.

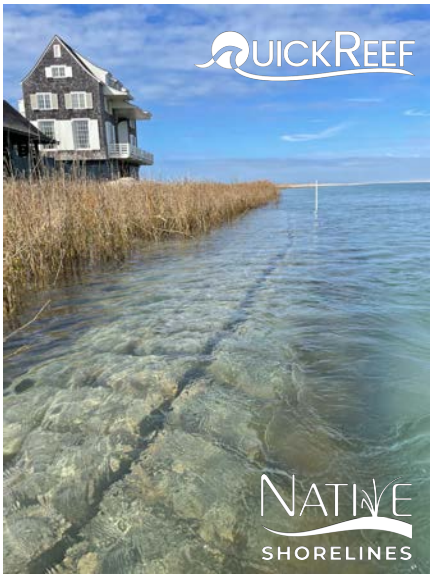


In closing, for-profit/non-profit collaboration can leverage the resources of BOTH entities to promote living shorelines and implement their use confidently & successfully.

Joint educational and strategic communication sends the landowner clear messages about the importance and reliability of living shorelines.

Teamwork ensures that projects progress in an organized manner from first contact to installation.

Acquired cost-share means that reticent landowners are encouraged to install living shorelines at a reduced out-of-pocket cost while being able to maintain a pricing structure for living shorelines that facilitates development of a robust living shoreline contracting business.



THANKS!

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CREDITS: This presentation template was created by Slidesgo, including icons by Flaticon, and infographics & images by Freepik and illustrations by Stories.

Thanks so much. Todd & I are available for any questions now or feel free to find us after the session.