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Committee on Environment
and Public Works

Washington, D.C.

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HEARING ON ECOSYSTEM RESTORATION PROJECTS OF THE U.S. ARMY CORPS OF ENGINEERS

Wednesday, June 7, 2023

United States Senate

Committee on Environment and Public Works

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The committee met, pursuant to notice, at 10:03 a.m. in room 406, Dirksen Senate Office Building, the Honorable Thomas R. Carper [chairman of the committee] presiding.

Present: Senators Carper, Capito, Kelly, Padilla, Graham.

STATEMENT OF THE HONORABLE THOMAS R. CARPER, A UNITED STATES SENATOR FROM THE STATE OF DELAWARE

Senator Carper. Good morning, everybody. I am happy to call this hearing to order.

This hearing room was used about a month ago for Bring Your Children to Work Day. The room was full of children of our staff, Democrats and Republicans. We had just a lovely time and a lovely celebration.

I think we have, this is like, somebody got the memo a little bit late, but Eric, I think your son is here, and he is 14. He looks like he is about 44. What a big guy. We are going to watch to see if his lips move when you speak. There you go. For those of you who are not children of our witnesses, we welcome you as well.

I am happy to call the hearing to order. Today, we are here to conduct, as you know, oversight of one of the U.S. Army Corps of Engineers' primary missions: that is ecosystem restoration. The Army Corps of Engineers' work to support commerce through navigation and flood control is, I don't think it is an overstatement to say, the backbone of our economy. It is a big part of what we do in this Nation.

Still, addressing the toll that this commerce takes on our environment is, and will continue to be, a top priority for us on this committee and also a top priority for the Army Corps of

Engineers.

From large-scale, multi-decade initiatives to small, focused projects, the Corps' ecosystem restoration work is critical. It has been and it remains critical. This is especially true as climate change continues to threaten communities, wildlife, and our economy, all of which depend on healthy ecosystems.

As many of us know, the biennial Water Resources Development Act, known as WRDA, establishes the authorities to the Corps' future work. In the 1986 WRDA, Congress first directed the Corps to lead ecosystem restoration efforts for the Upper Mississippi River, laying the foundation for an expanded environmental restoration role for the agency.

In every WRDA since then, Congress has expanded the Corps' ability to address critical ecosystem restoration. From the Great Lakes to the Gulf Coast and from the Chesapeake Bay to the San Francisco Bay Delta, communities across our Country have benefited from this important work.

Most recently, we expanded the Corps' definition of ecosystem restoration in WRDA 2022 to include factors such as climate change and coastal and riverine restoration.

Last month, Assistant Secretary Connor sat right there, and he testified before our committee that the Corps' budget request for fiscal year 2024 included more than $650 million for aquatic

ecosystem restoration, the most ever in a budget request. The growing amount, paired with the more than $1.9 billion in the Bipartisan Infrastructure Law, highlights Congress' ongoing commitment to the Corps' work.

These funds, however, are only the tip of the spear when it comes to the long-term needs of the Army Corps in this regard. Today's hearing will help us better understand the current size and scope of ecosystem restoration needs and what more our committee, this committee, can do to address community environmental restoration efforts.

The Corps' ecosystem restoration portfolio includes roughly 140 ongoing ecosystem restoration construction projects and studies. These initiatives focus on restoring the landscape and hydrology to more natural conditions and connecting the restoration and navigation projects, a win-win not just for our environment, but also for our economy.

For example, let's take Poplar Island in Maryland. Poplar Island could be Popular Island, in Maryland, but it turned out almost to be a nonexistent island in Maryland, but it was originally home to more than 1,000 acres in size and home to a small community of residents. From 1846 until recently, the island has slowly eroded, as some of you know, from what it was down to about four acres. Imagine that: four acres.

Thanks to the Corps' work pairing dredged materials from

Baltimore Harbor and channel maintenance projects with environmental restoration, Poplar Island has been restored from four acres to more than 1,700 acres today. The project exemplifies how the Corps' ecosystem restoration mandate supports the economic activity we depend on from our ports and harbors while creating wetlands and wildlife habitats, and, according to Senator Cardin, it is a beautiful place to visit. I am sure when he arrives, he will reaffirm that.

Today, we will hear more from our witnesses about the Corps' role in specific ecosystem restoration efforts. That includes the Everglades in Florida, along with Tres Rios in Arizona, and the Crab Bank Seabird Sanctuary in South Caroline. Before we do, let me offer a couple of thoughts on each of these efforts, and then turn it over to Senator Capito.

First, there is the Corps-led Everglades restoration, which includes Lake Okeechobee, the second largest freshwater body in the contiguous United States. If Senator Stabenow were here, she would tell us that Lake Michigan is number one.

The effort in Lake Okeechobee is the largest ecosystem restoration effort in the Corps' Federal portfolio. According to the Corps, these Federal investments in Florida are generating annual cost savings of over $300 million by preventing flood damage to property while fortifying water supply infrastructure and protecting fish and wildlife.

Next, there is Tres Rios in Phoenix, Arizona, an aquatic ecosystem found in the desert that unifies flood control, ecosystem restoration, and recreation. This project includes an engineered levee as well as the restoration of over 1,200 acres of wetlands, hiking trails, nature trails, and much more. These wetlands are critical for a State that is going through a historic drought.

Last, but not least, there is Crab Bank Seabird Sanctuary. I love that, Crab Bank Seabird Sanctuary in South Carolina. This project is considered a landmark legacy of the Charleston Harbor Post 45 Deepening Project. The deepening work from below the water resulted in the dredged materials for 42 acres of prime nesting ground above the water for over 15 species of shore and seabirds, another win-win.

Let me just close, if I could, by thanking members of our staffs and for the great work that you all did on WRDA 2022. I hear, not every day from our colleagues, but frequently from our colleagues, Democrat and Republican, from across the Country, their gratitude for the work that this committee does. I know that, as hard as you and I work, we know we couldn't do any of this without the great work of our staffs. I wanted to just say that again.

We look forward to hearing from each of you today on your experiences with the Corps and what more Congress might be doing

to support those critical efforts. Our hearing today will also help inform our oversight efforts and future legislative action on ecosystem restoration, specifically as we gear up for WRDA 2024, I can't believe we are about ready to start this again, which is just around the corner.

With that, I am happy to turn it over to Ranking Member Senator Capito for her opening remarks. It is good to be with you. Welcome.

[The prepared statement of Senator Carper follows:]

STATEMENT OF THE HONORABLE SHELLEY MOORE CAPITO, A UNITED STATES SENATOR FROM THE STATE OF WEST VIRGINIA

Senator Capito. Thank you, Chairman Carper, for calling today's hearing.

Since 2014, the committee has kept to a biennial WRDA schedule, authorizing water resources projects and setting national policies for the Civil Works Program, as the Chairman was saying. I look forward to continuing that track record next year. It does seem like déjà vu all over again. I think we just did this.

The EPW Committee also plays an important role overseeing how the Corps executes these authorities and funding provided by the Congress. Today's hearing will focus on one of the Corps' main mission areas, which is aquatic ecosystem restoration. This hearing will allow us to learn more about the successes and challenges of three of the Corps' aquatic ecosystem restoration projects.

I would like to extend my appreciation for our witnesses here today. I look forward to hearing your perspectives on these matters.

Lessons learned from completed and ongoing projects are critical to informing what, if any, modifications are needed to the Corps' existing authorities in future WRDA legislation. When designed appropriately, aquatic ecosystem restoration

projects can play an important role in restoring critical habitats while also mitigating loss of property and life.

The scale of these projects varies greatly across the Country, and the Corps uses different authorities and programs to carry them out. Large-scale projects are not the only option for protecting and restoring our aquatic ecosystems.

Often, small projects or modifications to existing water resources infrastructure can yield positive outcomes to aquatic ecosystems at a low cost. This flexibility is key to ensuring that the Corps' design solutions are tailored to address the diverse aquatic ecosystem restorations of all communities. In my opinion, the three projects that are the focus of today's hearing do a good job of underscoring all of these points.

While the Corps' aquatic ecosystem restoration efforts are important, the Corps and Congress must balance these efforts with the Nation's needs under the two main missions of the Corps: navigation and flood and coastal storm risk management. As we will hear today, win-win solutions are possible.

I am excited that Lorianne Riggin from the South Carolina Department of Natural Resources is here today. The South Carolina DNR partnered with the Corps in 2021 on the Crab Bank Seabird Sanctuary in Mount Pleasant, a beautiful spot, South Carolina.

This project was completed under the Corps' 204 authority.

This authority allows the Corps to carry our aquatic ecosystem restoration projects in connection with dredging at an existing navigation project. The Federal costs of a project under this authority cannot exceed $10 million.

For this particular project, the Corps and its partners utilized dredged materials from the Charleston Harbor Deepening Project for the replacement of the Crab Bank Seabird Sanctuary. This project, like others, faced initial challenges. However, the Corps and the non-Federal sponsor were able to adjust their game plan and find a solution that benefitted shorebirds without impeding economic opportunities for the local community.

Since the completion of the project, the small island has seen a return of shorebirds and seabirds. This project is an excellent example of how Federal, local, State, and private groups can partner together to provide meaningful, lasting results in an effective manner. I know and look forward to Ms. Riggin's testimony, because she will share this project's story in South Carolina.

Our witnesses' project-specific stories will help us understand how we can balance our water resources needs and maximize the use of our taxpayer dollars. I look forward to hearing also about the challenges and suggested improvements to existing authorities as we prepare for the next WRDA.

Last month, as you mentioned, we held a hearing on the Army

Corps' Fiscal Year 2024 budget request and implementation of WRDA 2022 with Secretary Connor and Lieutenant General Spellmon. It was evident at the hearing that each of our States faces a diverse range of water resources issues and opportunities. I am hopeful that we take lessons learned from the projects discussed today and use them to improve water resources projects of all types across the Country.

Chairman Carper, I look forward to continuing our partnership to develop the next bipartisan WRDA bill. Again, I express my gratitude to our witnesses.

[The prepared statement of Senator Capito follows:]

Senator Carper. Senator Capito, thank you so much for those remarks.

Now, we are going to hear from our panel of witnesses, who will share with us their perspectives on the Corps' ecosystem restoration projects.

We are going to start off with Eric. Let me just make some brief comments about Eric. He is the Chief Executive Officer of the Everglades Foundation, an environmental nonprofit that is focused on restoring America's Everglades. He has served in this role for over ten years, leading a team of nationally recognized scientists, educators, policy experts, and communications and development professionals.

Mr. Eikenberg and the team are committed to protecting the roughly three million acres of endangered habitat that is vital to Florida's economic and environmental viability.

Mr. Eikenberg, we thank you for being with us today. You may proceed with your statement that will be made part of the record in its entirety. Thank you so much. Please proceed. Welcome.

STATEMENT OF ERIC EIKENBERG, CHIEF EXECUTIVE OFFICER, THE EVERGLADES FOUNDATION

Mr. Eikenberg. Thank you. Chairman Carper, Ranking Member Capito, and to the committee. My name, as the Chairman mentioned, is Eric Eikenberg, and I am privileged to be CEO of the Everglades Foundation, celebrating its 30th anniversary in helping to restore America's Everglades through science, advocacy, and education. I want to thank the committee for this hearing and for inviting me here today.

Restoring America's Everglades is producing benefits far beyond their ecological value, including driving Florida's clean water economy, protecting drinking water supplies, providing flood risk mitigation, and carbon sequestration. The U.S. Army Corps of Engineers has been an indispensable partner in this undertaking together with the State of Florida.

Thanks to recent Federal and State investments, we are at a point of incredible progress and momentum. Following Congressional passage of WRDA 2000, Everglades restoration incorporates 68 separate public works projects that will store, clean, and send water south on the Florida peninsula. It is a national example of how traditional and natural infrastructure can be combined on a massive scale.

Under the Comprehensive Everglades Restoration Plan, or CERP, these projects were funded with a 50-50 Federal-State cost

share. We thank Congress for their recent investments, including the funding to the Army Corps within the Bipartisan Infrastructure Law and for your recognition of the importance of America's Everglades. The Army Corps has completed several non-CERP projects like the Herbert Hoover Dike repair and, in partnership with the State of Florida, restoration of the Kissimmee River and the construction of bridges along the Tamiami Trail.

In recent years, the pace of CERP projects is unprecedented. For example, east of Lake Okeechobee, in Martin County, construction of the C-44 Reservoir is complete. East of Naples, a 55,000-acre habitat restoration project in the Picayune Strand is nearly finished. South of Lake Okeechobee, the Corps recently broke ground on the crown jewel of Everglades restoration: the EAA Reservoir. This reservoir is a national priority and a model for prudent and efficient way to fund megaprojects with taxpayer dollars.

These and other projects confirm that restoration works, and I cannot overstate the importance of these results. With improved southerly flow, we are already seeing habitats reestablished in areas of Everglades National Park that just five years ago were parched by drought for half the year.

As you may know, Florida's coastal estuaries have been plagued by toxic blue-green algae that closes beaches, restricts

fishing, and is a harmful threat to wildlife and people. The algae blooms are fed by the unavoidable dumping of polluted water from Lake Okeechobee. The fortified Herbert Hoover Dike and the EEA Reservoir will reduce those harmful discharges by 55 percent, having a profound positive impact on Florida's tourism-based economy.

Storing, cleaning, and sending this clean water south is essential to Florida Bay. Its gin-clear waters and lush seagrass meadows makes Florida Bay the fishing capital of the world: a body of water alive with manatees, dolphins, and a wide variety of coveted game fish. Today, however, the bay is suffering from too little fresh water.

A restored Everglades will also provide a natural defense against saltwater intrusion due to sea level rise. Flowing more water south will protect our Nation's largest mangrove forest. Restoration will also protect existing peat soils in the Everglades that enhance the sequestration of new carbon.

We are at a critical juncture. With sustained Federal and State investments, this can be the Everglades decade in which we achieve the dream of a robust, healthy river of grass following a century of development. The stakes are high, both for the nine million people who rely on the Everglades for fresh water and for the Nation as a whole. Florida's tourism-based economy depends on clean water, and our economic research shows that

Everglades restoration yields a four-to-one investment.

Senators, you should be proud of the bipartisan progress in restoring America's Everglades. On behalf of the anglers, the realtors, the fishing guides, the business owners, and the millions who depend on the Everglades, let me say thank you, and please do not stop now.

[The prepared statement of Mr. Eikenberg follows:]

Senator Carper. Thank you. We won't.

Ms. Balluff, please proceed. Welcome. We are delighted that you have joined us.

STATEMENT OF TRICIA BALLUFF, ENVIRONMENTAL PROGRAMS COORDINATOR, WATER, WILDLIFE AND NEPA, OFFICE OF ENVIRONMENTAL PROGRAMS, CITY OF PHOENIX

Ms. Balluff. I appreciate the opportunity to speak before the committee about the importance of Army Corps support for ecosystem restoration projects. I would like to thank Chairman Carper and Ranking Member Capito and especially Senator Kelly for inviting me to be here today.

The City of Phoenix is the fifth-largest city in the United States and is the local sponsor for multiple U.S. Army Corps of Engineers ecosystem restoration projects associated with the Salt River, which is our main river channel through Phoenix and the surrounding cities. These projects are part of Senator McCain's Rio Reimagined legacy for the Phoenix metropolitan area. Rio Reimagined recently became the 20th EPA Urban Waters Federal Partnership location.

Historically, urban uses of the Salt River have included industrial activities, such as landfills and sand and gravel mining. The construction of Federal dams upstream has resulted in highly altered river flows, and as a result, there has been significant degradation of ecosystem values and reduced recreation opportunities.

In the arid western United States, riparian areas are estimated to be less than 2 percent of total land area, are

considered the most productive habitat and provide important water quality benefits. Seventy percent of threatened and endangered vertebrates in Arizona depend on riparian habitat along rivers.

In Arizona, it is estimated that as much as 90 percent of riparian forests have been lost. Invasive species, such as salt cedar, a highly competitive shrubby tree, are now in almost every drainage system in the southwest. Since the 1990s, Phoenix has worked with the Corps to achieve habitat restoration and improve flood risk management on the Salt River.

The first major project to be completed was Rio Salado, Phoenix, located in a historically disadvantaged area, which restored five miles of the Salt River and provides valuable recreation and education opportunities for the community. Downstream of this completed project are two Congressionally authorized Corps projects that have not yet been completed: Rio Salado Oeste and Tres Rios. These are both ecosystem restoration, flood risk management, and recreation projects.

When combined with the completed Rio Salado Phoenix, these will create approximately 19 contiguous miles of restored river corridor through Phoenix, directly benefitting river flows, habitat, wildlife, heat risk, and access to the river in disadvantaged communities. This is why, for the last 10 years, the city has been focused on obtaining the support and funding

from the Corps and our Congressional delegation to complete these two projects.

Today, I would like to highlight the Tres Rios Project to Illustrate the multiplicity of benefits from Corps ecosystem restoration funding. Tres Rios, when complete, will cover approximately seven miles of river channel and the adjoining bank, including almost 400 acres of constructed wetlands, a levee, in-river restoration, and effluent treatment elements.

Tres Rios' use of constructed wetlands to treat wastewater using natural processes make this a unique Corps project that help compliance with the regulatory standards while simultaneously providing quality habitat. By implementing this eco-friendly infrastructure, the city has avoided the need to spend $375 million on additional infrastructure for the 91st Avenue Wastewater Treatment Plant.

Through the treatment and direction of wastewater, combined with the invasive species removal and native species plantings, the area supports more than 200 species of birds and other wildlife, including some species listed as threatened or endangered under the Endangered Species Act.

This habitat also provides recreational access to natural river spaces in an urban environment and offers benefits from carbon sequestration, shading, and other cooling effects, which are important heat mitigation elements in our desert city.

A substantial amount of the invasive tree, salt cedar, was removed as part of Tres Rios. This removal and the preservation and additional planting of needed vegetation reduces fire risk, both in terms of fire severity and frequency. Salt cedar removal is also beneficial to native habitat by creating a more conducive environment for native plants to germinate and grow.

The river channel through Tres Rios facilitates passive aquifer recharge by allowing water to naturally infiltrate groundwater, while the levees constructed on the north bank of the Salt and Gila Rivers protect nearby neighborhoods from flooding.

As I have shared, the benefits from Tres Rios are wide-ranging from habitat to flood reduction to recreational opportunities. The City of Phoenix is appreciative of the many benefits that have come from collaborating with the Corps, and we fully support the Corps' mission in undertaking and completing ecosystem restoration, particularly in the southwest.

This year the Corps' Los Angeles District has been working on a post authorization change report to update the cost for the remaining phases of Tres Rios. The City of Phoenix will be seeking an authorization for construction in the 2024 WRDA bill to complete Tres Rios' in-river restoration and trailheads.

Thank you very much.

[The prepared statement of Ms. Balluff follows:]

Senator Carper. Thank you very much.

Ms. Riggin, welcome. Good to see you. Thank you for joining us.

STATEMENT OF LORIANNE RIGGIN, DIRECTOR OF ENVIRONMENTAL PROGRAM, SOUTH CAROLINE DEPARTMENT OF NATURAL RESOURCES

Ms. Riggin. Thank you so much, Chairman Carper, Ranking Member Capito. I am so excited to be here today to share with you the success of the Crab Brank Ecosystem Restoration Project in South Carolina.

For the record, my name is Lorianne Riggin, and I am the Director of the Office of Environmental Programs for the South Carolina Department of Natural Resources. I have been with the agency for 17 years and have had the pleasure of working with many interested conservation partners, the surrounding Mount Pleasant community, and the U.S. Army Corps of Engineers Charleston District to help oversee the Crab Bank Ecosystem Restoration Project.

Crab Bank is a dedicated heritage trust property and a seabird sanctuary managed and owned by the South Carolina DNR. It is located in the Charleston Harbor near the mouth of Shem Creek in the Mount Pleasant community. Crab Bank was originally formed with the placement of dredged material in the 1950s.

However, over time, due to wave action, tropical storms, and hurricanes, this important seabird sanctuary eroded away. In the early 2000s, Crab Bank was approximately 23 acres, but by 2017, Hurricane Irma came and washed away the remaining half acre of high ground in the early fall, which removed any

opportunity for nesting birds the following summer.

Prior to Hurricane Irma, the island served as an important predator-free refuge for a variety of State Wildlife Action Plan conservation priority species. Although all these species may not nest on the island each year, here are a few examples that have nested here at Crab Bank: brown pelican, royal tern, sandwich tern, gull-billed tern, black skimmer, laughing gull, American oyster catcher, willet, snowy egret, and tricolored heron.

Besides providing nesting habitat, the sanctuary provides winter loafing and feeding habitat for numerous species, including large flocks of shore birds that roost on the island at night. Of the 65 seabird, shorebird, and wading bird species, collectively known as waterbirds, that utilize South Carolina's coastal habitats throughout the year, 47 are listed in our State's Wildlife Action Plan as high conservation concern. Three are Federally listed and four are State listed. These waterbirds nest in colonies with thousands of other birds laying their eggs on the ground.

Crab Bank is one of the few places on the coast where these species can come nest undisturbed from human presence. This is incredibly important, as lack of nesting habitat may be limiting shorebird population stability and growth. Research shows that shorebird and seabird populations have shrunk overall by 70

percent in the last 50 to 70 years, with an accelerated decline during the last three generations for most shorebird species.

The coast of South Carolina is the most rapidly developing area of our State, and much of this is occurring along our shorelines, which has the potential to further decrease abundance and distribution of coastal water birds throughout their life cycle. In addition, increased recreational use along our shorelines further limits available nesting habitat. Thus, restoration of Crab Bank was an extremely high priority for the survival of many coastal water birds.

The South Carolina DNR had an incredible, once-in-a-lifetime opportunity with the deepening of the Charleston Harbor to partner as a non-federal sponsor with the U.S. Army Corps of Engineers Charleston District under Section 204 of the Continuing Authorities Program to restore Crab Bank and support shorebird populations.

Construction on Crab Bank was completed in seven weeks in 2021. Approximately 660,000 cubic yards of dredged materials was placed with varying elevations to diversify habitat. This increased Crab Bank in size from less than half an acre to 80 acres total, with 32 acres of available shorebird and seabird habitat above mean high water.

As of June 5th, 2023, the overall projects expenditures cost shared 65 percent to 35 percent between the Federal

Government and South Carolina DNR have totaled $695,939. The purpose of the project included restoration and enhancement of an important seabird sanctuary, protection of the salt marsh located near Crab Bank, and development of wildlife viewing and shorebird educational opportunities for Shem Creek ecotourism and the greater Charleston Area.

Through the Water Resources Development Act, the South Carolina DNR and the U.S. Army Corps of Engineers were able to successfully meet all the goals of this project. In 2022, Crab Bank provided nesting habitat for 107 pairs of least tern, 192 pairs of gull-billed tern, 283 pairs of black skimmer, and 8 American oyster catcher pairs.

I am happy to share today that nesting activity is in full swing for 2023, and there have been two nesting pairs observed so far of the State-threatened Wilson's plover.

The South Carolina DNR is thrilled with the benefit that the Water Resources Development Act authority provided to restore Crab Bank. This project was of great benefit to the public by supporting shorebird conservation and the beneficial use of the material dredged from the Charleston Harbor.

The South Carolina Department of Natural Resources would like to encourage the committee to continue to provide authorization for important ecosystem restoration projects like Crab Bank.

In closing, thank you for the opportunity to share the success of Crab Bank. This incredible project will have a lasting and important impact on waterbirds and the citizens and visitors to South Carolina for generations to come.

[The prepared statement of Ms. Riggin follows:]

Senator Carper. Thank you. Thank you all for your testimonies.

Ms. Balluff, you mentioned John McCain in your testimony, didn't you? Our former colleague, he and I were Naval officers and served together in the Vietnam War. He was a great hero and later, he and I were elected the House Representatives together the same day, joining forces again in the House and then later, in the United States Senate.

He was not a member of this committee, but he was someone who cared a lot about the environment. Take just a minute and talk about his involvement in the project, if you will, that you just discussed, very briefly. What did John do? What was his role?

Ms. Balluff. Yes, Senator Carper, thank you. I am happy to do that.

Senator McCain really spearheaded what is called the Rio Reimagined Initiative in Phoenix, and he has been very supportive of all of the ecosystem restoration that has been happening throughout Phoenix but also in surrounding cities. Rio Reimagined really came to be because of him. It is a 56-mile stretch of the Salt and Gila Rivers through the Phoenix metropolitan area that involves many different cities, Tribal Nations, and nonprofits, educational institutions such as Arizona State University for example, that have all come

together to collaborate and look for ways to work together to improve the overall river corridor through this metropolitan area for the benefit of all of our citizens.

Senator Carper. Good, thank you. This Memorial Day, we celebrated the 50th anniversary of the return and release of hundreds of Vietnam POWs. POWs were released by the Vietnamese all those years ago. We celebrated their lives.

John McCain and I and John Kerry worked together with former President George Walker Bush to get the Vietnamese government to turn over information on hundreds of additional missing in actions from the war that led to the normalization of relations between the United States and Vietnam. They are now one of our top ten trading partners in the whole Country, and U.S. Navy vessels call on Vietnamese ports, and we have remarkably strong economic and actually, defense relationship with them.

That is a bit far outfield, but I can't let the mention of John's name go by without saying some of that.

I like to quote Mark Twain from time to time. He said a lot of things that are worth remembering. One of the things that he said is that the two most important days of our life are the day we are born and the day we figure out why.

I understand in your life that there is an interesting twist to that story, and that quote has a special meaning to

you. When did you figure out why you were born? What career might you have been in?

Ms. Balluff. Was that question directed at me, Senator Carper?

Senator Carper. Yes. Okay, wrong witness.

We will try Ms. Riggin, same question. When did you figure out why you were born? Then we will come back and figure out why Ms. Balluff was born.

[Laughter.]

Ms. Riggin. I would say, there are lots of whys. The most recent why is my nine-year-old son, but early on, as a child, I had a strong desire to make a difference in this world, and my strong desire was to make a difference for natural resources. I learned that at a very early age that that is where I needed to focus my energy, and I have a lot of it.

Senator Carper. I believe you do.

Ms. Riggin. And so, in eighth grade I sent a letter to the South Carolina Department of Natural Resources requesting information about what kind of jobs I could do for the State and serve the State and its citizens and the natural resources. They provided me some information, and I ran with it, got a degree and got my foot in the door, and I have been there ever since.

Senator Carper. Good.

I am going to turn to Mr. Eikenberg, whose son is actually sitting back in the first row, over his right shoulder, his 14-year-old son. We welcome both of you today.

For folks, young people, it might be like his contemporary in high school or maybe in college or not. Why should his generation, your son's generation, care about what we are discussing here today? Why is it relevant in their lives?

Mr. Eikenberg. Mr. Chairman, thank you for that question. In the spirit of bipartisanship, I do want to take a moment to acknowledge your former colleague, Senator Bob Graham. When the Everglades restoration was passed in the year 2000, he worked with my former boss, Congressman Clay Shaw, to ensure that that was a bipartisan effort, and it continues to be that way to this day.

Senator Carper. That is great.

Mr. Eikenberg. For children, watching our body politic to find our environmental issues where we can come together in a bipartisan way, I think it is a great example for the next generation.

I will just say that 10 years ago, from my perspective, watching what was billed as the "lost summer" in Florida due to algae outbreaks stemming from the Army Corps discharging water from Lake Okeechobee. It rallied voices that had not been at the table: business leaders, tourism officials, realtors. These

men and women became the foot soldiers in ensuring that we have restoration that we can not only do it this generation, but then pass it on to the next generation.

For me, that was a moment to realize that what we are doing is greater than ourselves, but we are able to pass it on soon to the next generation.

Senator Carper. Good. Bob Graham and Clay Shaw, two good friends. It is nice to hear their names again. Bob Graham was a governor of Florida and also a United States Senator from Florida for many, many years.

When I was thinking of running for the United States Senate, I went down to Florida to meet with him, have breakfast, and he arranged for me to meet some folks down there. I remember that I asked him, I said, when you had the opportunity to be a U.S. Senator, when you had the opportunity to be governor, which job do you prefer and why?

He said, you know, to use the football analogy, he said, when you are the governor, you are the quarterback on the field, calling every play. When you are the United States Senator, you are the general manager sitting up in a box, watching the game.

I said, well, which do you prefer? He said, well, I like to be on the field calling every play. He said, every team needs a good general manager. Besides, the seats are pretty good. The seats are pretty good.

With that, let me yield the floor to the Senator from West Virginia.

Senator Capito. Thank you, Mr. Chairman.

Ms. Riggin, let's talk about the Crab Bank Seabird Sanctuary. I have trouble saying that whole thing at once.

I know it was a public-private partnership. Can you talk about the public-private partnerships, both in this case, and others that you see in your State and how they really help to get the completion of the projects?

Ms. Riggin. Absolutely, happy to. When we first started with the Crab Bank project, we had a short timeline. We were in 2019 and we had a feasibility report that gave us an estimate of what the total cost of the project would be, which would have required the State to have $1.4 million sitting, waiting, and ready.

Given budget constraints, we figured out we needed some help, and so we also already had conservation interest groups, like the Coastal Expedition Foundation, which is a nonprofit arm of a local ecotourism outfit, the Coastal Conservation League, Audubon South Carolina, that had the expertise to help fundraise.

Under the State's statute, we have something called the Non-Game and Natural Area Statute that allows the South Carolina Department of Natural Resources to receive funds for the purpose

of non-game management. We utilized that funding opportunity under that existing State statute and the expertise of our conservation partners to help us rally within the community to help leverage additional funds to bring to the table, so that we were sitting, waiting, and ready for the $1.4 million, had that been the ask of the Department of Natural Resources of the non-Federal sponsor.

In addition, as we were on that short timeline of just 12 months, Audubon South Carolina went out and applied for a National Fish and Wildlife Foundation grant to help supplement funding cost as well, and that was a one-to-one match ratio, so that was a $1.4 million ask that we all had to come up with a $700,000 match. We pulled that all together to have enough funding that we needed.

Plus, that allowed us to springboard future projects from that existing pot of money that we have now created at the Coastal Bird Conservation Program. Crab Bank was a starting block for that additional funding to go further for shorebird conservation.

Senator Capito. Right.

I am sure, Mr. Eikenberg, you have jumped through a few hoops yourself, trying to figure these things out, the public-private partnership portion.

Mr. Eikenberg. Senator, it is a key part of where we are

today with Everglades restoration. Certainly, the Corps working with the non-Federal partner, in this case, the South Florida Water Management District, but bringing a multitude of other stakeholders to the table.

I want to applaud the Corps for allowing those differing voices to be heard and to be taking that feedback. I would submit to you that this issue, restoring the Everglades, has become a national model. Thanks to the Congress in 2000, you set out a plan. We know the problem; we have a solution, and we are working in a collaborative way to make sure it is successful.

Senator Capito. I will go back to Ms. Riggin. Are there any additional authorities that you feel would allow the Corps to better assist non-Federal partners? The reason I think that is important is for the examples that you all have put forward, but we have heard some rumblings sometimes, having dealt with the Corps myself, sometimes, needing a little bit more assistance for them to be able to help their non-Federal partners.

Did you find that was a challenge or not, are you finding that?

Ms. Riggin. I did really find that was a challenge from the CAT 204 perspective. I think planning assistance with the States' program, which is something else that the Corps does,

that would be another avenue where they need additional support to provide help.

I know within the Charleston District there is a long list when the State comes to the Corps and says, hey, I have an interest and need your expertise on these items. I think that is an area that probably additional support could be given to help them address a lot of the planning assistance for the State's request.

Senator Capito. Does anybody else have a comment, Ms. Balluff, on that particular issue, any other authorities the Corps might need to better assist non-Federal partners?

Ms. Balluff. Yes, I certainly agree with Ms. Riggin.

One other thing I would add is that additional resources for the Corps, once the Civil Works project is complete is sometimes very useful as things come up over time with these ecosystem restoration projects to continue to work with the Corps on them and finding solutions can be quite a useful exercise. I would add that.

Thank you, Senator Capito.

Senator Capito. Thanks. Mr. Eikenberg

Do you have any other comments? I have to go to another hearing, here, and so I am going to apologize. I am going to leave after I hear from Mr. Eikenberg.

Mr. Eikenberg. Senator, any opportunity where the non-

Federal partner could maybe get out ahead on a particular portion of a project. The Corps has demonstrated a willingness to let the South Florida Water Management District do that, and it speeds up the implementation. We appreciate the Corps being at least willing to do that. If there is additional authority to allow that to occur in a greater manner, we would certainly support that.

Senator Capito. Thank you all.

Senator Carper. We have been joined by a couple of fellows from out west. We are delighted you could come. One of our witnesses brought a 14-year-old son with them today. Would your son raise his hand, sir? Go ahead, raise your hand. There you go. You have some people up here.

I think Senator Capito has a couple of sons. I have three sons, and Alex has, I believe, three, two? Three. Your guys are a little bit younger.

Senator Padilla. Three sons as well, and all three will be on summer vacation as of this Friday, so please pray for us.

[Laughter.]

Senator Carper. You are in our prayers. Right now, you are recognized, any questions you want to ask. Thank you.

Senator Padilla. Thank you, Mr. Chairman. These conversations are all too timely, I think, as a lot of us in the field know the significance of a recent Supreme Court ruling

that limited the scope of the Clean Water Act, and more specifically, the Federal Government's ability to protect thousands of miles of rivers, streams, creeks, and adjacent wetlands throughout the western United States.

At the California State Water Board, this is how they framed the last month: wetlands provide an important buffer and filter, protecting our Nation's water. But in the semi-arid watershed, most will not be able to satisfy the Corps' requirements for a "continuous surface connection to bodies that are waters of the United States in their own right, so that there is not clear demarcation between waters and wetlands."

Ms. Balluff, given your role in the City of Phoenix, are there particular challenges posed by an increasingly arid west for aquatic ecosystem restoration projects? I guess the bigger picture question here is, how important is ecosystem restoration just for the restoration of habitat, but for the economic health of communities as well as water quality, recreational opportunities, et cetera?

Ms. Balluff. Yes, thank you, Senator Padilla. Yes, it is very important, and it is also challenging in the desert southwest.

But ecosystem restoration, I would argue, especially along our rivers, is one of the most valuable things that we can do in terms of ecosystem restoration. These riparian areas are some

of the most productive and rich areas and have the most benefit. They also draw a lot of economic interest in development along the banks, as well.

So it also draws a lot of people into the river and really helps them connect with nature, which I think we know from social sciences, really provides a lot of mental and emotional and social and physical benefits to our communities. While it is a challenge, I think it is a challenge well worth pursuing.

Senator Padilla. Great. I know in your testimony you mentioned that the genesis of the Tres Rios Ecosystem Restoration project was the need to treat wastewater discharges.

As a native of Los Angeles, I know all too well the challenges of restoring aquatic ecosystems in a highly paved urban area like Los Angeles. Thanks to many years of hard work, as well as funding from the Bipartisan Infrastructure Law, the U.S. Army Corps of Engineers and the City of Los Angeles is making progress to restore historic riparian and freshwater marsh habitat, 11 miles of the 52-mile-long Los Angeles River.

Referencing back to the Tres Rios project, in brief, how is that impacting drought resiliency? I assume it has been helpful. I assume there has been progress. Anything you could highlight, and then once again more broadly, what advice would you have for western cities looking to improve water quality and to restore habitats while facing all the same challenges?

Ms. Balluff. Thank you, Senator Padilla. I am going to try and remember all those questions. You may have to refresh me on a couple.

[Laughter.]

Senator Padilla. How is that project working, the Tres Rios project? How is it working?

Ms. Balluff. Tres Rios was originally contracted, as you say, to treat wastewater effluent. The water is treated at our wastewater treatment plant, then it goes into these constructed wetlands that actually help to polish and finish, remove some nitrogen and chlorine attenuation, things like that, to meet Clean Water Act requirements before we then discharge it into the river. In fact, all of the water that supports the Tres Rios ecosystem restoration does in fact come from that wastewater treatment plant.

So all of the water from that wastewater treatment plant is beneficially re-used, which I think is one of the really great aspects of this, and a really good way to use water, especially in a time of drought. Because it is not only going into the ecosystem, it is going downstream and being used in other ways downstream as well.

Senator Padilla. Again, given that experience, whether it is design, whether it is funding sources, what advice would you have to other jurisdictions throughout the west dealing with the

same changing climate, the same water supply challenges?

Ms. Balluff. I certainly know that the wastewater treatment process that we engaged in with the constructed wetlands saved us hundreds of millions of dollars in terms of what we would have otherwise had to spend. So simply from a financial perspective it made a lot of sense.

But also the benefits that we accrue from the flood attenuation, flood risk management, from the ecosystem restoration and the visitors we get from not only around the world, but also from our local community and across the United States make this a really valuable project.

So certainly, we have found it extremely beneficial. I would definitely advocate for looking at ways to have those multiple uses of water that provide those multiple benefits we have seen from Tres Rios.

Senator Padilla. Excellent. Thank you so much. Thank you, Mr. Chair.

Senator Carper. That was an interesting description of the work that you have done out there. It is really ingenious and highly commendable.

Senator Kelly, good to see you. Others have been noting, with respect to some of these issues, looking forward to the future of this planet, that we have a dog in this fight, these fights. We also have children and grandchildren. You have

both.

Senator Kelly. Thank you, Mr. Chairman. Senator Padilla was a great lead-in to me. I will first defer to my colleague on the other side of the aisle if he is ready.

Senator Carper. I am sorry, jump right in.

Senator Graham. Welcome, Ms. Riggin. How are you doing? I appreciate your coming to the committee. Mr. Chairman, thank you for having the hearing, and to my colleagues.

Senator Carper. I am trying to figure out how to say this, the entity down in South Carolina. We are tripping over it pretty badly. But we will get it down.

Senator Graham. I was very much involved with you, I was impressed with how you brought people together to Crab Bank. It is a place for birds to nest, right? It was a win-win with the City of Mount Pleasant, DNR, the Corps of Engineers. If you could, just tell the chairman a little bit about the project. What was the key to bringing people together?

Ms. Riggin. Thank you, Senator Graham. I appreciate the invite to be here, and I appreciate the support from your staff as well today.

I think the key to the hurdle that we ran into were concerns regarding the project. Crab Bank sits at the mount of Shem Creek. There was some concern from the community, when you hear you are going to put in 660,000 cubic yards of material,

they have concerns about where that material is going to go.

So we had an opportunity with the Corps of Engineers, thankfully the dredging timelines worked out that we were able to go and rerun a coastal model to help provide some data as to where the material would go.

As well, when we went through the feasibility process, we had 25 different alternatives of a footprint that we were looking at for Crab Bank. So because we had so many choices on the table, and we had additional data in time, we were able to calm the fears and concerns of folks about where that material was going to go and make sure that it was going to stay on Crab Bank.

But I think the key to that is just people being open and honest and the continued communication between not only DNR working with the town of Mount Pleasant, but also the Army Corps of Engineers sitting down with the town of Mount Pleasant, that we were all coming at it together, knowing that we had the goal in mind for this island for shorebird conservation. Everybody bought into that idea. We just had to make sure that everybody was comfortable with how we were going to go about doing that.

I think it is just open and honest communication and often.

Senator Graham. Our office was a part of that, and I want to echo that I appreciate the role you played, and DNR, and all the agencies involved, State, local and Federal. I think it was

a win-win.

Thank you very much. I appreciate your giving me a chance to speak, Senator Kelly. Thank you, Mr. Chairman.

Senator Carper. We are delighted that you could join us. Thanks.

Senator Kelly, you are on.

Senator Kelly. Thank you, Mr. Chairman. I want to extend a very special welcome to Tricia Balluff, who is joining us today from the City of Phoenix. I want to follow up on Senator Padilla's comments and questions about Tres Rios, and the vision for a renewed Salt River in the Phoenix area. That was championed by my predecessor, Senator John McCain.

Also, I want to acknowledge the work of Mayor Gallego of the City of Phoenix that they have done to advance these projects in partnership with Federal agencies, including the Army Corps.

So these projects that we already talked about a little bit show how investments made by the Corps and their local partners can improve water quality, recharge aquifers and support water conservation, even in a desert. There were a few of these benefits that I want to discuss. You talked first about hundreds of millions of dollars of savings in water treatment costs. I think it was about $375 million.

Can you explain how that project on the Tres Rios wetlands

and the water, how it has saved the city? Specifically, how has that project saved the city $375 million?

Ms. Balluff. Thank you, Senator Kelly. Thank you for having me here.

Yes, absolutely. Back in the late 1990s, I would say, there were new Clean Water Act requirements through the Environmental Protection Agency for discharge of wastewater into waters of the United States that were going to necessitate some significant infrastructure investments in our existing wastewater treatment plant. We had been working with demonstration wetlands to see how they would effectively treat this to these levels.

It turns out it was really effective. So in partnership with the Corps through Tres Rios, we crated these full-scale, really significant hundreds of acres of wetlands that are actually functionally for treatment through passive removal of nitrogen, through soil processes, through plant processes, and also through the attenuation of chlorine levels as it moves slowly through these wetland ponds. The sunlight helps to dissipate the chlorine, helps us to meet our standards.

Senator Kelly. Does that mean since it is downstream, the wetlands are downstream of the wastewater plant, does that mean you can push water through the treatment plant faster? Is it less energy costs? Where is the financial savings coming from?

Ms. Balluff. The financial savings is the avoided costs of the infrastructure that we would have had to construct otherwise. In terms of energy costs and timelines, I would have to check on that.

Senator Kelly. So you have to build less infrastructure because you have this downstream wetland?

Ms. Balluff. We did not have to build hard infrastructure because of the wetlands.

Senator Kelly. Another benefit I want to mention here is the recreational use of those wetlands, Tres Rios, fishing, hiking, and there are others. Certainly maybe even now with the amount of water that is there, kayaking.

Can you explain how the next phase of Tres Rios will enhance the recreational benefits of this project, and what else will Phase 3(c) of the project include?

Ms. Balluff. Thank you, Senator Kelly. I am happy to.

Right now, the maintenance paths are used as trails by folks who come visit. There are no trailheads, it is not technically open to the public per se, because there are no formal trailheads for them to enter through. So the number of people who can come in at one time is pretty limited. And it is really only at one location.

In Phase 3(c), part of the finishing phases of Tres Rios is to construct some trailheads along the Tres Rios, so that it

really opens access and a lot more people can come and enjoy it, especially those from neighboring communities. The rest of Phase 3(c) is really finishing up the in-river restoration on the western end of the Tres Rios property, down to the Agua Fria River.

Senator Kelly. Can you confirm that the reason the city and the Corps can't begin work on this next phase of the project is because there is not the authorization from Congress yet?

Ms. Balluff. That is correct, yes.

Senator Kelly. Mr. Chairman, I hope that in the next WRDA bill, we can include that authorization, so they can finish Phase 3 of the Tres Rios project, and the city can move forward on this project.

I am out of time, but I have another question.

Senator Carper. Go ahead, please.

Senator Kelly. Ms. Balluff, I think in your opening testimony you may have talked about a little bit more the Salt River ecosystem. I wasn't here for that. Can you explain to the committee the issue of the salt cedars on the Salt River, and what risks they pose to the city and the region?

Ms. Balluff. Yes, thank you, Senator Kelly. Salt cedar, for those of you not in the southwest, you may not be familiar with it. It is a highly invasive shrubbery tree. It forms in really dense stands, and it creates, it has a lot of litter and

debris that fall off of it, also secretes a lot into the soil, it drops a lot of salt into the soil. So it secretes these highly saline soils and also creates a really high fire risk.

It also recovers really well from fire risk, more than our native species. So it really does push out a lot of our native habitat and creates a monoculture, which also creates a lot of risk in terms of fire and disease and other detrimental things to the ecosystem restoration.

Senator Kelly. What has the City of Phoenix done to try to remove these salt cedars?

Ms. Balluff. It is a very difficult problem plaguing a lot of agencies across the southwest. Tres Rios removed a lot of salt cedar; it was huge benefit to the river in that area.

But it is an ongoing challenge. We do continually remove. We also try to replant with native species whenever we remove, so that they can have some competitive advantage, to be able to take root and outcompete the salt cedar as it tries to resprout.

Senator Kelly. What can the Army Corps do to help?

Ms. Balluff. More projects to help remove salt cedar would be fantastic.

Senator Kelly. Is there any innovation out there, is there anyone trying to, instead of remove it, and I know there is always a risk in doing this, but are there any pilot projects that are taking a different approach?

Ms. Balluff. Senator Kelly, I am not aware of any pilot projects. I think where we are at right now is trying to find the appropriate balance of managing salt cedar, increasing native habitat, but accepting that probably there is going to be some level of salt cedar in our southwest systems, and how can we manage that and keep it to the minimum possible.

I think really the most effective method is when you remove, you replant with native species. If necessary, salt-tolerant species, and gradually attenuate the soil so that you can then have more of the riparian species.

Senator Kelly. How did we wind up with this plant in the southwest?

Ms. Balluff. Many, many decades ago, it came from Eurasia, is my understanding, it was introduced for multiple reasons, flood control and I believe even aesthetic reasons. It can be quite beautiful when it is flowering green, unfortunately. I believe that is how it came in. Then of course, it is highly competitive, so it kind of took off and spread on its own.

Senator Kelly. Thank you. Thank you, Mr. Chairman, for the extra time.

Senator Carper. Thank you, and thanks for bringing your witness with you. Very interesting and very helpful.

We started off, I asked Mr. Eikenberg to think out loud for us at the beginning of our hearing why should young people the

age of his son, high school and maybe beyond high school, why should they care about the issues we are discussing today. He shared some thoughts with us.

The same question to Ms. Balluff. Why should young people in high school going off into college, off into the world, why should they care about these issues? Then Ms. Riggin, the same question.

Ms. Balluff. Thank you, Senator Carper. It is a great question.

I think there are a few different reasons for this, one of which of course is do we want our kids to inherit a world in which our rivers are dry and dusty in the southwest, with nothing in them but landfills and sand and gravel pits. I think we probably want more for them. And I think they want more for themselves.

I think also as we go out into these areas and we experience the benefits of them that comes to us, especially for those in college, who might be having to study for a test or something.

But in all reality, from a water quality perspective, from a fire risk management perspective, the benefits to our surrounding area, to our air quality, to our water quality, they are significant. These riparian areas provide a lot of filtration benefits that we can't really get without really

expensive infrastructure otherwise.

So in terms of cost effectiveness, these are a really cost-effective way to help achieve some of our goals for quality.

Senator Carper. Good. Thanks for that.

Ms. Riggin, any thoughts?

Ms. Riggin. Just to add, people should care because this is our home. We read about habitats and ecosystems in textbooks, but we don't always put ourselves as we are in that habitat, we are a part of that ecosystem.

The more that we can take care of it, the more we care about it, the more that we all are stewards of it, the natural resources professionals aren't lifting the heavy load alone, we are carrying it together to protect our air, our water, our landscapes, so that it is not just a cool place to go hike that we are going off to visit, it is a place that supports our clean air, our clean water.

So the why is because we are here and we are part of that ecosystem.

Senator Carper. Every now and then we are fortunate to have a leader of another nation come to Washington, to Capitol Hill, and speak at a joint session of the Congress. We usually meet in the House chamber because it is bigger than the Senate chamber. We have House and Senate members there.

One of the more interesting speakers in recent years has

been the President of France, President Macron. He came and spoke to us, not in French, but in perfect English. One of the things he said to us in his speech, he talked about our planet. He said, this is the only planet we are going to have, there is no planet B. This is it; we have to take care of it. I will never forget that.

I use that line a whole lot since I heard it from him. He was a special guest at a state dinner hosted by President and Mrs. Biden, and I got to see President Macron again. I told him about that line and reminded him how he had used that and how I have stolen it and never given him any credit for it. He said, we have a special word in French for people like you, who use our best material without acknowledgement.

[Laughter.]

Senator Carper. My staff has given me a question, I have a bunch of questions I will ask, but I will lead it off with this one, so I don't get in trouble with them.

The environmental benefits of the Corps' ecosystem restoration portfolio, including those projects that we are talking about here today clearly show a response to climate change through increasing resilience. At the same time, these projects promote the economic health of the communities that you represent and that I represent and Senator Capito and others represent, through activities such as navigation, agriculture,

and ecotourism.

I will start with you, Ms. Riggin, and we will go to your right, please. It would be helpful if you would lead us off, take a minute or two to elaborate for us on the challenges and the opportunities, challenges and opportunities in partnering with the Corps on ecosystem restoration. Clearly, something is working, and working right. I know we can always find room for improvement.

If we could start with that, and we will come down to Ms. Balluff and then Mr. Eikenberg, please. Any thoughts?

Ms. Riggin. Crab Bay was my first ecosystem restoration project, so I don't have a ton of experience under my belt. But I think the more we can do those types of projects, the better we are all going to end up being, and the more we give the flexibility to the Corps to be able to work with those non-Federal sponsors to accomplish those goals.

A lot of times there are very rigid timelines, very rigid points at which the project is managed. The more flexibility that we have to develop a project which allows us to go back and do things like we did with rerunning a model, providing additional information or go further and monitor the project post-construction, so that we have some data to support future successes and document what we accomplished so that we can learn from it and replicate in other projects.

Senator Carper. Good. Thank you. Same question, Ms. Balluff.

Ms. Balluff. Yes, thank you, Senator Carper. I think that flexibility is probably one of the most important things that we can gain with the Corps. I think they have so much capability in their offices, and they have, at least in our district, I know they have a lot of passion for these projects. We have just had such wonderful working relationships with the folks in the Los Angeles District. We are really grateful for them and for their efforts.

Certainly, I think I mentioned this before, but after the fact, long-term, allowing the Corps the flexibility to stay involved in the restoration projects that they do perform, so that when things come up, we can circle back around to them and they would have the resources to be able to work with us to fine tune and shift things as needed. As we are finding and discovering more information as we move along these projects, it would be incredibly helpful.

Senator Carper. All right, good. Thanks.

Mr. Eikenberg, with the Everglades in mind, question. Elaborate a bit for us if you would on the challenges and the opportunities in partnering with the Corps.

Mr. Eikenberg. Mr. Chairman, I mentioned that this issue is a national model. It has taken time to get to that point, 23

years now into the process of a restoration effort between the Army Corps and a non-Federal sponsor, the State of Florida.

I do want to give a plug for the regular order on the Water Resources Development Act. Having the ability for the Army Corps hearing issues on the ground, understanding the importance of having those authorizations or those tweaks, those refinements, there is an integrated delivery schedule that the Army Corps of Engineers and the South Florida Water Management District have outlined. It takes us through the end of this decade. It is clear, it demonstrates exactly what needs to occur.

But there are moments when both sides, along with stakeholders like the Everglades Foundation, offer suggestions for WRDA bills to be available again, enable and ensure that these projects come to fruition. We have come a long way. The ability not only to preserve a drinking water supply for a growing population but these added benefits, these economic benefits that come with this, the issues relating to storing and sending water south, recharging an aquifer that is the drinking water supply now for almost six million people.

And then alone the benefits of pushing against sea level rise and saltwater intrusion. This issue covers the gamut and having the Army Corps of Engineers identifying the challenges and not backing away from them and seeking assistance from NGOs

or the State of Florida to assist in that regard. I salute the Corps from Jacksonville to Atlanta to Washington in making this effort again a national model for the Nation.

Senator Carper. Good. Thank you.

Speaking of sea level rise, as a Senator from the lowest-lying State in the United States, our State is sinking, the seas around us are rising. Not a good combination. We have a special concern about the climate changes driving sea level rise, land subsidence and flooding in our State and other States on the coasts.

According to Climate Change 2023 Synthesis Report summary for Policymakers from something called the Intergovernmental Panel on Climate Change, the largest driver of climate change is carbon in our environment, resulting in unprecedented rising global temperatures and corresponding extreme weather events. The same report, however, also points to carbon reduction benefits associated with ecosystem restoration.

Mr. Eikenberg, would you please explain for us how the Everglades project is helping to address the root causes of climate change through environmental restoration. Please also explain for us the significance of the climate mitigation and resilience benefits seen in the Everglades thus far.

Mr. Eikenberg. Mr. Chairman, I think it is important to point out that the Everglades itself, these organic peat soils

in the Everglades have been sequestering or capturing carbon for centuries. It has been building over time. As we continue to move in the direction of hydrating these wetlands, again, this is a massive plumbing project in Florida to redirect the way freshwater flows. By storing, cleaning, and sending that water south, you are rehydrating wetlands, a massive wetland forest, a significant wetland area within our world.

The ability to hydrate those wetlands sequesters carbon. It takes off roughly about 230,000 cars off the road just in freshwater wetlands, and the climate benefits of keeping those wetlands hydrated.

We are also seeing benefits along the coasts, the mangroves that surround the Florida peninsula also add a tremendous benefit on a carbon bank which the Everglades is. By having that head of fresh water flowing down to the Florida Keys through Everglades National Park, down to Florida Bay, it is recharging the Biscayne Aquifer. That porous limestone within the Everglades, the fresh water permeates through that limestone and pushes eastward. It acts as a buffer, it pushes against saltwater intrusion.

The issues along South Florida's coast with sea level rise, you cannot abandon, we cannot abandon the issue of restoration within the Everglades to deal strictly or solely with the climate concerns along the coast. They both are interconnected.

It complements it, and that is why with the Army Corps of Engineers, the State of Florida is moving in a very aggressive way to see this restoration, the adaptation, the mitigation issues that come with it are very positive.

Senator Carper. Good. Thank you. Thank you for that.

Ms. Balluff, we have already talked about the question I am about to raise. You may want to add to what has already been said with regard to this. We understand from your testimony that the Tres Rios project repurposed treated wastewater in the restoration of some 1,200 acres of wetland in the desert, quite a noteworthy feature. In addition to these wetlands and restoration features, the project provides for flood protection and local recreation.

Please share with us, supplement what you have already said, and anything else you might like to add, how this unique project came together with the diverse group of stakeholders that traditionally do not work with the Army Corps of Engineers. What were some of the challenges in setting up this creative approach to ecosystem restoration? If you could think of how some of those challenges were overcome, that would be welcome, too.

Ms. Balluff. Thank you, Senator Carper. I was actually not involved with the very beginnings of Tres Rios, so I don't have any first-hand knowledge of that.

But I do know that a very significant group of stakeholders was brought together, including not just the U.S. Army Corps of Engineers, but also the Environmental Protection Agency. Again, we had to meet those Clean Water Act requirements, and U.S. Fish and Wildlife Service, Gila River Indian Community, and others. It has been a really successful partnership.

I would say it has even expanded since that time. So as we have been working to get continued authorization to complete Tres Rios, we have an entire collaborative group of stakeholders representing private parties, non-profits, State and local agencies and Federal agencies that are all coordinating together to make this happen, including the Arizona Game and Fish Department, and Arizona State University and the Rio Reimagined Project.

I would say that has given a lot of strength to our efforts, because it has allowed these different perspectives to be brought in. It has also allowed for everyone's ideas and thoughts to be heard ahead of time, so that we can figure out the right solution and the right path forward to achieve a solution that makes people feel like they are achieving what they want to, like they are getting what they want out of this project and what they need out of this project. That has been really helpful.

Senator Carper. We want them to feel like they have been

listened to.

Ms. Balluff. Yes, it is absolutely, incredibly important. Also to have their ideas implemented into the project is really important.

Senator Carper. Good. Thanks. If I could, I would like to ask Ms. Riggin to talk with us about a dynamic system. I will set up the question by saying, maintaining your project like the Crab Bank requires the stakeholders to think about a long-term project plan and lifecycle challenges and costs. Water is a dynamic force, as we know, and comes with erosion and other shifting environmental factors.

Recognizing that restoration does not stop with one investment, what considerations go into approaching long-term success of a restoration project such as Crab Bank? Are you thinking about next steps to preserve or maybe to alter the project to ensure long-term viability?

Ms. Riggin. Building a seabird or shorebird island is tricky. By nature, those types of ecosystems are dynamic. We have five seabird sanctuaries off the coast of South Carolina, and all of them are ebbing and flowing and changing with tides and storms. That is just part of it. That is what those seabirds and shorebirds really like. They also really like our beaches, but we like our beaches, too, and the two of us combined don’t go well together.

So building Crab Bank, while there was a $1.4 million price tag initially, everybody found the value in providing any available nesting habitat, knowing that shorebirds and seabirds are in crisis. We wanted to ensure that we could provide the habitat as long as we could, knowing that Mother Nature is going to do what Mother Nature is going to do. There are going to be tropical storms, there are going to be hurricanes that are going to change the footprint of that island.

But if we get one successful nesting season, last year we had 500 nests, and that does not count individual chicks in each of those nests, that matters. That counts. So the investment from the Department and the community and the conservation partners, we need all the available nesting shorebird habitat that we can.

We know that the project was modeled that given the past history of the current storms, it should last for 50 years. There is hope that maybe there will be additional dredging material opportunities in the future as we know there are limited places for dredged material to go. But it has to be the right sediment composition for us to be able to add it back to the island to maintain that in the future.

So while 50 years may seem like a short amount of time, if we get back to historic numbers of Crab Bank in the five to ten thousands of nests, it is worth it.

Senator Carper. Thank you for that response.

I have another question for each of you. Then at the very end of the hearing, I am going to ask you, is there a question you wish you had been asked but you have not been asked. You can tell us what that question might, and then if you will, answer it. It will take us a few more minutes to get to that point in the hearing.

If I could, in the meantime, Mr. Eikenberg, a question with respect to process. The Everglades, as we know, is a complex program, very complex program, comprised of a whole lot of project. They range in size, they range in scope, they range in objectives.

Please describe the input that the Everglades Foundation and its partners provide to the Army Corps of Engineers for the Everglades restoration process in order to ensure that restoration proceeds in a timely way and meets intended outcomes. Do you as a stakeholder in the process feel that your voice is heard?

Mr. Eikenberg. Mr. Chairman, to the second portion of your question, the answer is yes. The ability as an NGO to be able to go to the Corps with the expertise that the Foundation has, we have tremendous expertise within the science of the Everglades. A lot of this is modeling. It is hydrological modeling, it is ecological modeling, it is economic results.

To be able to run those scenarios with a variety of assumptions, the Army Corps has their process, the South Florida Water Management District has theirs. At the Everglades Foundation, we are proud to be able to do the same thing, the same type of modeling.

To then be able to go to the Army Corps with suggestions, to think differently over here or over there, and to have that ability to sit across a table and express those results and realize that it is being heard, it may not make the final result. But nine out of ten times, there are different portions of what is being recommended, not just by us but also by the other partners, from Audubon Florida to the Sanibel Captiva Conservation Foundation, Captains for Clean Water and countless others who are expressing the desire to see this project come to fruition.

I want to give a shout-out to Colonel Booth in Jacksonville, the commander of the district. He is accessible, he travels throughout Florida to make sure voices are being heard. Again, the economic return on this, we heard about the population of wading birds or shore birds coming back. The example for the Corps on their work in the Kissimmee River, that flood plain has returned, the wading bird population has come back in droves.

The same Army Corps that dug the channel south of Orlando

that drained that flood plain in the 1960s, for it now to be fully restored, the meandering Kissimmee is back, that is an example of the Army Corps understanding not just the ecological returns but also the economics. The ecotourism benefits to the State of Florida and to the Nation are tremendous.

That is kind of how we see it as it relates to an organization that is at the table and has a voice in this process.

Senator Carper. Thank you for that. Did you say Captains for Clean Water?

Mr. Eikenberg. Yes. It is a group that was founded in 201 when there were some algae outbreaks around Fort Myers. Mr. Chairman, I will tell you, anglers, boat captains, those who make a livelihood on the water, I was standing on a boat in 2016 and a gentleman said, I don't know where your office is, but you're standing in mine. And my office is closed because of the way water is being managed in Florida.

So they have come to the table with realtors, chambers of commerce, this is a business. It is an economic message as much as it is ecological. Those groups and others are having a tremendous impact.

Senator Carper. We have a local chapter of Captains for Clean Water on this committee. Senator Kelly and I are both retired Navy captains. We are very interested in clean water.

Mr. Eikenberg. Thank you for your service. Yes, sir.

Senator Carper. I have one other question for Ms. Balluff. It deals with a general reevaluation report. I think there is an acronym for that, GRR. I understand that there are some remaining construction features for the Tres Rios project, with a reevaluation of the project underway to address increased costs in the next steps.

Could you tell us a little bit more about the phasing of the project and your work with the Corps to ensure benefits are seen without all of the features completed?

Ms. Balluff. Yes, thank you, Senator Carper. Yes, there is a Post Authorization Change Report underway right now for a cost update for the final phases of Tres Rios to be completed. But in the meantime, many of the phases of Tres Rios have been completed, including the levee, which is already providing vast benefits to the neighboring communities that are removed from the flood plain as a result of construction of that.

There is also of course the treatment wetlands that we talked about that are already providing the benefits for water quality that was released into the river. We also have over-bank wetlands and some in-river restoration that people can access, and they do. They come over from across the Nation and all over the world to fish and to birdwatch. There are over 200 species of birds. We have pelicans in Arizona, in Phoenix,

because of these wetlands.

So there are significant birdwatching opportunities. Audubon Arizona does surveys along with Game and Fish for us. We have threatened and endangered species there.

So we are definitely, we have conferences come out from across the Nation and across the world to look at Tres Rios and see what has been accomplished here and see the success of the project. It is definitely being noticed. We look forward to that notice increasing as we complete it and open up those trailheads and the rest of the in-river restoration.

Senator Carper. Good. Thank you.

Early in the hearing, I asked you and then I found that I should have asked Ms. Riggin when she figured out in her life why she was born. She gave us a great answer about it being, eighth grade when the light went off in her head.

Ms. Balluff, when did you figure out why you were born?

Ms. Balluff. I think it took me a little bit longer. I played around with a lot of different reasons, I guess, for why I was born.

Senator Carper. I was born to play third base for the Detroit Tigers. They had different ideas.

[Laughter.]

Ms. Balluff. Yes. I really came to it in college and I was trying some different majors out, and ended up in forestry

at Colorado State University. It really clicked with me. My love of the outdoors and my appreciation of what nature gives me personally and what I could then do to support it right back is really what brought me to it.

Senator Carper. That is good.

Mr. Eikenberg, same question. When did you figure out, and your son will be interested in this, when did you figure out why you were born?

Mr. Eikenberg. I think my moment was in high school. I attended Marjorie Stoneman Douglas High School in Parkland, Florida. My 11th grade government teacher, Doug Pierce --

Senator Carper. You still remember his name, he would be pleased, if he is listening in.

Mr. Eikenberg. I hope he is. If not, I want to send him this clip.

Doug Pierce is the person who got me interested in policy and public politics and the importance of government service. I watched my mentor, Clay Shaw, who spearheaded the comprehensive Everglades Restoration Plan through Congress in 2000. I got to see first-hand as a native Floridian, Clay Shaw, the importance of balancing the environment with economic development in Florida.

We have been doing this for years, Mr. Chairman, as you note, decades, generations upon generations have either messed

it up and now we are fixing it. For me to be able to be here in Washington in years past to see how this process works, to understand the bipartisan nature of the environment, conservation, regardless of our party affiliations, we all unite for clean water, clean air, healthy wetlands, drinking water. The Everglades is the perfect example for all of that to come together.

Not only am I proud that my son Patrick is here with me, but I have three other children. The example that we are doing within the Everglades is the example to pass on for future generations. Doug Pierce was the key for me back in 1993, 30 years ago. I hope that anyone listening to this message of hope and success around the environment, across the Country, engages them to be part of something bigger than themselves.

Senator Carper. Great. Thank you for that.

Doug Pierce, if you are out there, thanks very much. You gave a big assist on the play.

Now we are going to close out with this. I will ask you each to give us a question that you wish you had been asked but were not. If you had been asked the question, how would you respond. Go ahead, Ms. Riggin.

Ms. Riggin. Thank you, Senator Carper.

I really can't think of anything that I would like to share more about the project. I am excited that I was asked to be

here today to share the success of Crab Bank. I am thankful for the support of all of the conservation community entities that helped raise money for the project to help us get here.

I am excited to share, and I touched on it a little bit earlier, about the fact that Crab Bank was so much more than just that one project. By building the relationships with the conservation community and others and highlighting the need for support for shorebird, seabird, wading bird conservation, we had the ability to establish the South Carolina Coastal Bird Conservation Fund that has allowed us to do even more.

We have around $400,000 in the fund that helps us leverage Federal grants to continue and further shorebird conservation for the future. And fingers crossed sitting back here for the Recovering America's Wildlife Act, and hoping that we will have a steady, constant, consistent funding stream to support non-game wildlife management in States across the Country like we do with the Wildlife and Sportfish Restoration Program.

Senator Carper. Thank you. Ms. Balluff, what would you have like to have been asked that you weren't?

Ms. Balluff. I would have love to have been asked what is next after Tres Rios.

Senator Carper. What is next after Tres Rios?

[Laughter.]

Ms. Balluff. Thank you, Senator Carper, for asking that

excellent question. I am happy to respond to it.

What is next after Tres Rios is Rio Salado Oeste, which is a really important ecosystem restoration project in the Salt River that will connect our completed Rio Salado Phoenix, which is our completed ecosystem restoration project, with Tres Rios.

Right now, we have about an eight-mile gap in restoration between those two projects. Rio Salado Oeste will fill that gap and will give us 19 contiguous miles of restored Salt River through Metropolitan Phoenix, through surrounding disadvantaged communities.

Senator Carper. How many miles did you say, 19?

Ms. Balluff. Nineteen contiguous miles of restored river, once all three of these projects are complete. We are very excited. We did get, the project got work plan monies for the Corps to start working on the general reevaluation report for Rio Salado Oeste. So we are getting that underway and are really excited for the next steps on that project as well.

Senator Carper. Good. Thanks. Good question.

Mr. Eikenberg?

Mr. Eikenberg. Mr. Chairman, I think the question of will we ever finish Everglades restoration. We hear that. I will be brief.

I think the answer is yes, I know the answer is yes. By the year 2030, the remainder of this decade, with critical

projects that are being planned and are ready for construction, we will do that. Then we shift to perpetual protection. Because again, the next generation is going to have to ensure that what we have fought for, these remaining three million acres of Everglades that we are protecting, survives.

So we know the problem. We have the solution.

What I want to also highlight, Mr. Chairman, is the political will has really stepped up in a manner that is delivering this. This is a mainstream issue now. The ability from the President and the Congress to the governor and the State legislature, everyone is moving in the same direction. There is massive momentum around Everglades restoration.

This is a national treasure. It is America's Everglades. With your help and those on the ground back in Florida, we will get it done.

Senator Carper. That is great. My colleagues hear me say probably too often, bipartisan solutions are lasting solutions. That is just another way of saying part of what you just said, I think. Most helpful.

I have some boilerplate language I am going to use in just a minute before we close out the hearing. I ride a lot back and forth from Delaware to Washington to come to work, every day almost. Another guy who used to ride the train a lot was Albert Einstein. Albert Einstein, I don't know if he was in Princeton,

maybe in Princeton where he taught. He would get on the train and go to New York, get on a train and come to D.C. He rode the train a lot.

One day he got on the train and he started looking for his ticket and he couldn't find it. He was looking in his coat, his trousers, he looked in his briefcase, couldn't find it. The conductor came along and said, Dr. Einstein, we know who you are, don't worry about it. You are fine, you don't have to worry about it.

The conductor walked away to go to the next car, and he turned around and looked back at Dr. Einstein again, Dr. Einstein was down on his hands and knees looking for his ticket. The conductor ran back and said, Dr. Einstein, you don't have to worry about it. We know who you are. We know who you are.

Dr. Einstein looked up at him and said, "I know who I am, too. I just don't know where I am going."

[Laughter.]

Senator Carper. One of the best ways to figure out where to go is to find out what works and do more of that. One of the things I think works is regular order. That term has been used a number of things. It is one of the things that Senator Capito and I think our colleagues, both Democrat and Republican on this committee, agree.

We like regular order. We like working with States. We

love working with the Army Corps of Engineers, and we have oversight of them. They do great work in our State and 49 other States as well. We are in their debt.

Speaking of Albert Einstein, a lot of people remember he once said, the definition of insanity is to keep the same thing over and over again and expect a different result. That is a good quote.

But my favorite Einstein quote is, in adversity lies opportunity. In adversity lies opportunity. That is a great one. I use that one every day. There is plenty of adversity in our State and our Country and our world. But there is also opportunity. The key is to find in that adversity the real opportunities. I think that is part of what we are talking about doing here today.

Finally, I would like to say, find out what works, do more of that. You all have given us some great examples of what works, so we can be inspired by you and learn from what is going on in your States. We applaud you for that.

Now to the boilerplate. Before we adjourn, some housekeeping. Our Senators, our colleagues, will be allowed to submit written questions for the record by 4:00 p.m. on Wednesday, June 21st, that is two weeks from today. We will compile those questions, send them to each of you. We are going to ask you to try to reply to us by Wednesday, July 12th. We

will follow up with this information and these dates.

I will ask the majority staff, anything else? Minority staff?

I just want to say to our staffs, these hearings don't just happen. They happen because we have great staff members. They help figure out who would be good witnesses to bring in and get everything coordinated and provide us with just an enormous amount of support and help. I say to all of you, thank you very, very much.

To those of you who spend your life, this is a big part of your life, what you do, you are not just doing it for yourselves and your family, you are doing it for the rest of us, we thank you for that. We are inspired and encouraged by the work that you do.

With that, this hearing is adjourned.

[Whereupon, at 11:38 a.m., the hearing was adjourned.]