

Resilient Schools and Communities (RiSC) Replication Toolkit



**NATIONAL
WILDLIFE
FEDERATION**

**Resilient
Schools and
Communities**

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The mission of the **National Wildlife Federation** is to *Unite all Americans to ensure wildlife and people thrive in a rapidly changing world*. In a critical time of accelerating climate and biodiversity crises, we envision improved ecological balance and safe, equitable access to clean water, air, and land to ensure that all wildlife, people, and ecosystems thrive. For more information about the National Wildlife Federation, visit our website at www.nwf.org.

For more information about the Resilient Schools and Communities program, visit [our website](#).

This RiSC Replication Toolkit was supported in part by the **Kettering Family Foundation**, the Federal Emergency Management Agency (FEMA) under award EMN-2023-CA-05012, and National Wildlife Federation.

The statements, findings, conclusions and recommendations herein are those of the author(s) and do not necessarily reflect the views of FEMA or the U.S. Department of Homeland Security.

Overview

The National Wildlife Federation (NWF) is excited to present this Resilient Schools and Communities (RiSC) Replication Toolkit. This document is designed to support potential RiSC replication partnerships in understanding key program components, and to provide the tools and resources needed to successfully replicate this award-winning program.



RiSC student teams measure sea level rise during a field trip in Coney Island, NY.

Contents

Overview	3	● What's Next	18
Introduction	6	RiSC Integration With EcoSchools.....	18
History and Background.....	6	Adaptations for Program Settings (Climate Impacts).....	18
Why Replicate?	7	Standardized Curriculum and Professional Development Models	18
RiSC Program Outcomes.....	7	Enhanced Green Career and Job Readiness for Youth	19
Overarching Approach and Essential Elements of RiSC Programming.....	8	● Case Studies	20
Six Essential Sources of Effectiveness	8	U.S. Virgin Islands (2018-2020)	20
● RiSC Program Model Components	9	Texas (2020 - Present)	21
● How to Get Started	10	New Jersey (2021 - Present)	22
Core Program Development and Management	10	Puerto Rico (2022 - Present).....	23
Program Management and Facilitation	10		
Budget and Fundraising	10		
Timelines	11		
Evaluation.....	11		
● A Commitment to Working in Partnership With Frontline Communities	12		
Engaging With a Prospective Community	12		
Program Setting.....	13		
Curriculum Adaptation	13		
● Student Learning	15		
Sea Level Rise Lessons	15		
Oral History Interviews & Student Podcasts.....	15		
Field Experiences	15		
● Culminating Community Event	17		

APPENDICES

1. RiSC Logic Model
2. Basic Agenda for a RiSC Session
3. Tasks Timeline Template
4. RiSC Curriculum Models
5. Sample Professional Development Materials
6. Sample Program Recruitment Materials
7. RiSC Vulnerability Assessments
8. Sample Lessons and Activities
 - a. Sea Level Rise
 - b. Oral History Interviews & Podcasts
 - c. Coastal Redesign
9. Sample Field Guide
10. Sample Community Action Projects
11. Culminating Community Event



ON A COOL MARCH MORNING middle and high school students in bright puffer jackets step off of their yellow school buses parked along a residential neighborhood bordering one of Brooklyn’s most vulnerable shorelines, Coney Island Creek Park. Today is a day they’ve eagerly awaited. They will be stewarding the landscape and helping to protect the shoreline and residents from rising seas by planting American Beachgrass.

This is not the first-time students have been to this area. Over the past six months they have been learning about and experiencing the natural and built features of the coast, examining green and gray infrastructure and learning about the ecology and vibrant biodiversity of the dunes and creek itself. They’ve engaged in sea level rise visualizations and community vulnerability assessments and wondered “what will all those people do if the water comes up to the road?” And they have learned how frontline communities like Coney Island experience the inequitable aspects of the “first and worst” impacts of climate change.

But today is the day that these students will move from learning to action. Today they will plant hundreds of American Beachgrass (*Ammophila Breviligulata*) culms, helping to mitigate the effects of coastal flooding and erosion, and supporting the protection of this Coney Island community from climate impacts. This is the Resilient Schools and Communities program in action.





Introduction

This June, New Yorkers experienced dystopian orange skies and smoke-filled air from the Canadian wildfires. The summer of 2023 was Earth's hottest since global records began in 1880. As the planet warms, global impacts such as sea level rise, wildfires, extreme heat, and other climate impacts intensify. As a result, a majority of young people are understandably experiencing climate grief or anxiety as a result of this climate crisis. They see and experience first-hand what is happening in their communities and worldwide.

Despite this, a majority of students in the U.S. spend just two hours per school year, mainly in middle and high school science classes, learning about the climate crisis. With some exceptions, topics like sea level rise, climate resilience, climate justice, responsible consumption, climate solutions, and green careers are typically only part of school curricula if passionate teachers take it upon themselves to teach about the topic. It's time that U.S. students receive a quality climate education that prepares them for the future.

At the heart of the Resilient Schools and Communities (RiSC) program is the goal to fill these critical knowledge gaps by educating middle and high school students, teachers, and their communities about climate science, impacts, justice, and climate resiliency, using an empowering solutions-focused lens that helps youth to feel hopeful about the future and gain a sense of agency.

History and Background

Since 2016, the National Wildlife Federation (NWF) has engaged in developing, piloting and building out the award-winning Resilient Schools and Communities (RiSC) curriculum and program. The program started in 2016, funded by the National Oceanic and Atmospheric Administration (NOAA) and created through a collaborative partnership between Brooklyn College, NWF, the Science and Resilience Institute at Jamaica Bay, and New York Sea Grant. During this time a RiSC logic model and curriculum was developed and tested by teachers aimed at providing students with the fundamentals of climate science and extreme weather risks. As well, a RiSC vulnerability assessment was developed to help students assess their schools and neighbor-

hoods' vulnerability to these risks and to explore actions that could be taken to build climate resiliency. In 2020, NOAA published a Theory of Change (TOC) in part inspired by the RiSC program and other NOAA-funded environmental literacy projects.

(See Appendix #1 for RiSC Logic Model)

In 2019-2020, through generous funding from FEMA, RiSC expanded its partnerships to include BioBoat, the American Littoral Society, Trees New York, Kid Power Academy and Huffman Studio. During this time students were engaged in learning about coastal flooding, urban heat islands and the critical links between climate justice and climate resiliency. They planted trees on their school campuses to alleviate extreme heat and also received public speaking training. In addition, NWF worked with Huffman Studio, Inc. to create an award-winning documentary about the program **It's Our Future**.

Over the past three years (2020-23), RiSC has expanded its reach to include working more closely with schools in Coney Island as well as with schools in Cape May County, New Jersey. The program focused on connecting students to residents and community partners in those locales. In New York, this includes the Coney Island Beautification Project. Through a series of field-based activities from an adapted RiSC curriculum, students increased their awareness of future climate impacts. With residents and partners, they explored local resilience strategies to cope with coastal and sunny day flooding, and sea level rise

To date, RiSC has been adapted in New Jersey, Houston, Texas, and the U.S. Virgin Islands. In 2023-24 NWF is working with Organización Pro Ambiente Sustentable (OPAS) in Puerto Rico to adapt the RiSC program in the frontline community of Loiza.

To learn more about RiSC, visit <https://www.riscnyc.org>. To see the program in action, please view a short 10-minute documentary about our most recent program iteration in New York City, “Where it Floods: Planting Hope in Coney Island.” <https://natwild.life/WhereitFloods>

Why Replicate?

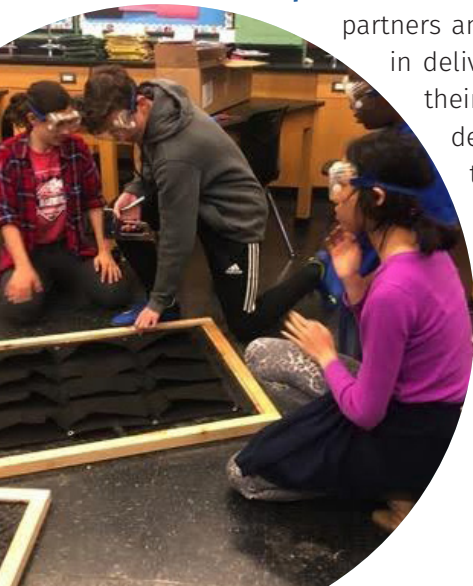
The overall success of the RiSC program in New York City and adaptations in New Jersey, Texas, the U.S. Virgin Islands and currently Puerto Rico, has created a successful model for climate education and provided us with an opportunity to strategically determine how best to scale the program, reaching a greater number of educators and students in the U.S. and supporting the communities in which they live. **(See Appendix #2 Basic Agenda for a RiSC Session).**

In order to maintain the fidelity of the RiSC model, NWF with support from the Kettering Family Foundation, has taken on the goal of scaling this innovative program. From the beginning we knew that this larger-scale replication would require a more intensive process to ensure that we were doing more than just “diffusing” or scaling out the program. In this case, NWF sought to look at not only “scaling out” the RiSC model, but to also look at strategies for “scaling up” - the preconditions and resources needed to scale an innovative program and “scaling deep” - helping to address the values, cultural practices, needs of a community, and investing in relationship-building to help accelerate change.

To accomplish this, NWF engaged in a multi-team strategic planning process in 2023.

Through this strategic planning process, we have identified our vision for replication and the essential elements that are core to a successful RiSC program. The following

Replication Toolkit is designed to provide partners and organizations interested in delivering the RiSC program in their communities with an understanding of the elements that contribute to its success and effectiveness along with the tools and resources necessary to jumpstart the program.



RiSC Program Outcomes

The RiSC program was designed to give students agency and opportunity in building more resilient communities and to work towards environmentally just cities. By better understanding the strengths and needs of their community, students will be able to take action alongside their community to increase physical and social resilience to local risks associated with climate change. This vision includes outcomes from identified key stakeholders in RiSC programs; these include students, teachers, community partners and program providers.

Students

- Will develop a greater understanding of climate science and historic structural racism that has led to inequitable climate impacts.
- Will possess and/or develop a sense of agency, voice, advocacy, and self-efficacy around the climate crisis.
- Will see themselves as a key part of the solution in their communities.
- Will look to the future with greater hope.

Teachers

- Will develop greater engagement in and excitement for teaching about climate change and justice.
- Will see the value and results of providing students with more control over their own learning.
- Will see that environmental project-based work is more meaningful and impactful for students.
- Will experience and understand the communities in which they work in new ways.

Community partners

- Will see and value young people who are invested in their communities, learning about the culture and history of their place.
- Will be engaged in true collaborations with schools that are willing to center their voices and address their needs.
- Will feel heard and honored in decision-making that affects their communities.

Program Providers

- Will work with communities where they are, co-creating to meet the needs and address the culture of the communities.
- Will support learning and activities that provide communities and places for humans and wildlife to survive and thrive.
- Will provide students and teachers with meaningful experiences that shift their perspectives and influence how they live their lives.

Overarching Approach and Essential Elements of RiSC Programming

Key to program success is ensuring that the RiSC program is centered in the communities it serves through all aspects of the program model. This centering should address environmental justice, embrace project-based learning, and ideally be informed by an indigenous system thinking based perspective that views all human and ecosystems as being interrelated. To maintain the integrity of the program the following essential sources of effectiveness should be included in the replication:

Six Essential Sources of Effectiveness

1. Authentic community connections are essential and cultivated in multiple ways, such as through choice of community partners and program providers, cultivation of intergenerational relationships, and emphasis on community and youth voice. RiSC is dedicated to serving frontline communities that have been hardest hit by climate impacts. It is critical to identify and build relationships with community leaders that are already doing vital resiliency work, to understand what projects and partnerships are already in place, what issues and needs are facing the community, and how those needs are being addressed, or not.

2. A curriculum that is both standardized, integrated and flexible is necessary.

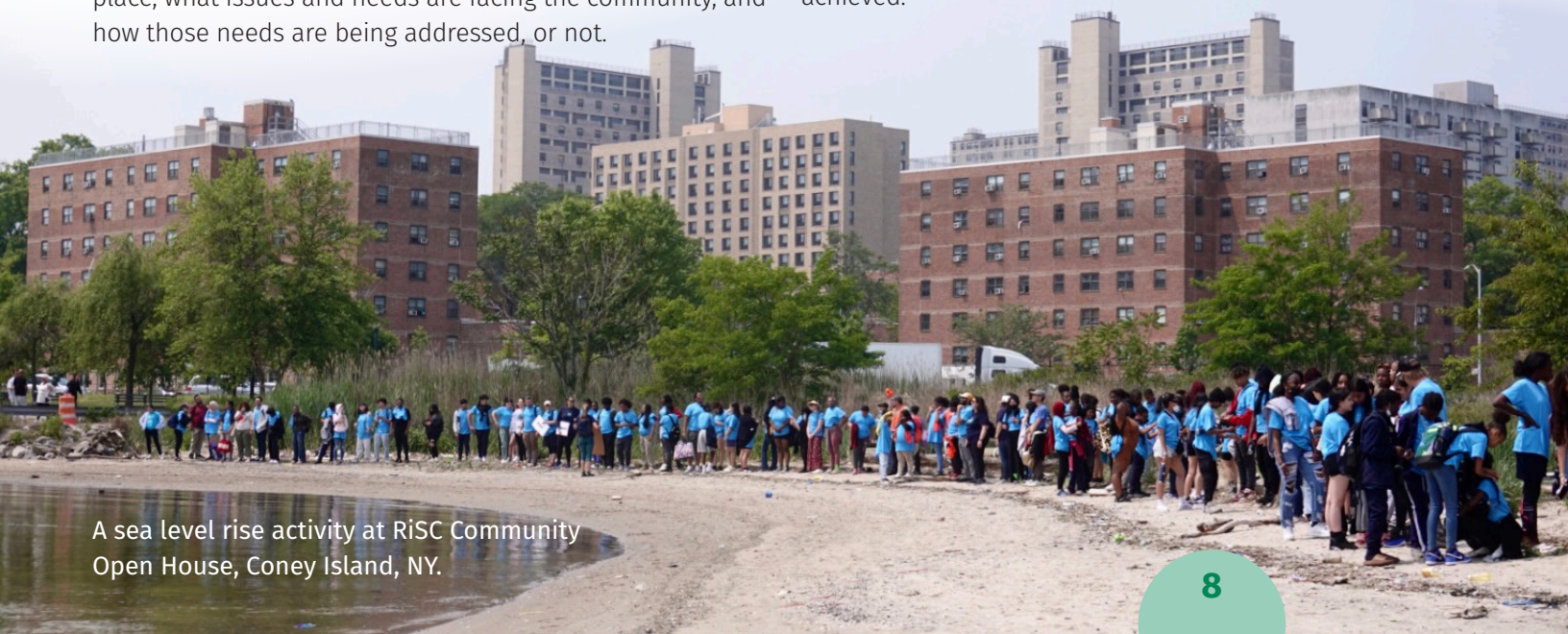
Elements include climate system content, place-based field trips, a vulnerability assessment and/or site audit, multiple options or “on ramps,” and climate action projects that elevate community voices.

3. Teachers are supported through professional development, coaching, resources, and compensation for their time. It is critical for teachers to understand the RiSC curriculum components and to feel comfortable teaching the topics covered. The most effective teacher training is led by other teachers who have a mastery of the subject.

4. Program providers actively manage the implementation of RiSC, including both on-the-ground, day-to-day activities in the community, delivery of teacher professional development and ongoing teacher support, plus overall project management, administration, budget, and more. Establishing a budget for your program and securing funding is essential prior to program implementation.

5. Youth engage in solution-based community action projects that meet community needs, mitigate one or more climate impacts such as flooding or urban heat islands, and provide students with a sense of agency to help them feel that they are helping to solve the climate crisis.

6. The school and community share and celebrate what is learned and accomplished through the RiSC program with a culminating intergenerational community event that engages all program partners to share what has been learned and achieved.



A sea level rise activity at RiSC Community Open House, Coney Island, NY.

RiSC Program Model Components

A standardized RiSC Program Model should be administered with fidelity to five essential model components. How these components are implemented allows flexibility to meet the needs of the community that the program is intended to serve. Every RiSC session should start with a community circle to participate in an Indigenous land acknowledgement and to establish group rapport and address climate anxiety.

(See Appendix #2 for Basic Agenda for a RiSC Session)

1. RiSC Team (composition is flexible based on setting)

- Teachers
- School administrators
- Community members
- Program Manager(s)

2. Curriculum

- Interdisciplinary, not just science but exploring history of place, local culture, issues facing a community, climate solutions and careers
- Holistic and integrated approach (informed by indigenous systems-thinking)
- Vulnerability assessment or site analysis that addresses social and physical systems
- Connects students to local residents in a variety of ways
- Student research on resiliency solutions

3. Field Experiences

- Engages students with hands on learning activities that mitigate local climate impacts
- Conduct an observational walk or survey to learn about key features of the area, ecology and culture
- Brings together community partners, local residents and students
- Includes a brief history of pre-conditions and systems that may have contributed to why the area is important, critical, frontline etc.

4. Community Action Project

- Informed by the community partners and students
- Addresses a climate impact with a resiliency solution
- Complies with any local permitting requirements
- Empowers students to feel that they are making an impact

5. Culminating Event

- Opportunity for students to share their RiSC projects within their community
- Amplifies community goals and lived experiences with climate impacts
- Supports local education and resiliency initiatives and showcases future opportunities for students



How to Get Started

Core Program Development and Management

The following are important aspects of the program that need to be addressed prior to program implementation:

Program Management and Facilitation

Program management and facilitation at several levels are critical to a successful RiSC program. Ideally, one full-time and one part-time individual should manage the program. One full-time on-the-ground staff person who works to manage day-to-day operations with schools and communities ensures the fidelity of the program. A part-time (50% FTE) Program Manager focuses on the bigger picture aspects such as scheduling, monitoring, documentation, reporting on deliverables, administration, and ensuring effective program delivery. This person should also be responsible for ensuring sustained ongoing project evaluation.

Budget and Fundraising

The costs of replicating the RiSC program can vary greatly depending on the level of partner resources, in-kind contributions and local costs (e.g. bus costs for field trips). Program costs may include:

- Salaries for program management
- Travel for staff
- Professional Development (PD) and associated PD costs
- Stipends for teachers
- Stipends for community partners
- Cost of student activities and field trips
- Action project costs
- Cost of culminating event
- Program materials and supplies

Resources are vital to scaling and sustaining the innovative and effective RiSC program. NWF is grateful for the loyal and generous support of funders such as NOAA, FEMA, and the Kettering Family Foundation who recognize the value of climate education and the critical role it plays in both addressing the current climate and biodiversity crisis and developing the next generation of climate leaders. A sustained and diverse funding model including government grants, individual donors, and family and corporate foundations is critical to our success. Consecutive year support enables our program team to focus on developing tools and tracking outcomes to sustain and build this program and ultimately reach more students, families, and educators.



"Experiences like this have been important in helping students understand why we need to learn to advocate for frontline communities like ours. Students became more vocal and determined to learn more. I'm thankful for the guidance and support provided by our RiSC partners who have made this kind of service learning and self advocacy a reality for my students."
- Rachelle Travis, Teacher at I.S. 288 Shirley Tanyhill



Timelines

A program timeline is a good way to plan out your program activities by month, especially if you are scheduling field trips. The duration of the RiSC program varies depending on intended outcomes, needs of the communities and capacity of the program providers. Ideally, program planning and development is accomplished in time to provide professional development (PD) to educators during the summer break and implementation with students in the fall. **(See Appendix #3 for Tasks Timeline Template).**

Evaluation

Evaluation has been and should be an important component of any RiSC replication. It is crucial for the systematic collection, analysis, and reporting of program information, for the purpose of learning from and improving program design and implementation.

NWF retained an independent third-party evaluator for RiSC from 2020 to 2023. The team developed evaluation instruments during the first few months of the planning year with input from NWF staff. The evaluation centered on three questions:

1. Did the RiSC curriculum enhance teachers' ability to educate students about the scientific, ecological, and social aspects of climate change?
2. Did students become more knowledgeable about climate change, and did the curriculum motivate them to become more involved in climate resiliency efforts within the broader Coney Island community?
3. Did the process of developing and implementing the curriculum strengthen ties between teachers and community partners?

To answer these questions, evaluators conducted in-depth interviews with teachers and community partners during all three years, while also reviewing samples of publicly available student work. The responses from the interviews – that included a number of recommendations – were synthesized into a final report and delivered to NWF.

Because formal evaluation can be costly, program managers may choose to develop their own informal pre and post surveys. Questions should be tailored to the goals and intended outcomes of the program, and the students, teachers and community members being served by the program.



“As an educator, with no background in climate science, the RiSC program did an excellent job of supporting me with the knowledge, curriculum and resources to ensure that I felt confident doing this important work.”
- Suzanne Hanafy, Instructional Support Services, The High School for Climate Justice

A Commitment to Working in Partnership With Frontline Communities



“Throughout our nation’s history, people of color, immigrants, and low-income families were directed to and often forcibly relocated to low-lying areas both prone to flooding and zoned for industrial use. A lack of green spaces and municipal investment have left these areas hotter and wetter than surrounding neighborhoods.” - Groundwork USA

Frontline communities are those that experience the “first and worst” climate change impacts, due to systemic injustices, yet are often the least responsible for causing it.

Participating schools have primarily been middle and high schools that are under-resourced (Title 1 schools) and that are located in frontline communities. Program managers should maintain a commitment to learning from community partners they engage with. Community partners are key to helping set the stage for the program, identify existing relationships, and determining the community’s strengths and needs. The program exists to amplify these strengths and needs in an effort to work towards more environmentally just cities. Students and partners are given opportunities and agency in building resilience together.

Spend time learning about the history and culture of the community, its geography and ecology, vulnerability to climate impacts, demographics, local schools, community board members and other influential residents and groups, resources and infrastructure (or lack thereof), and potential field trip sites.

Engaging With a Prospective Community

We don’t always live in the communities we work and go to school in. This is often true of teachers and students. If you work for an organization that doesn’t have staff who live in a community you want to work in, be prepared for some skepticism about your motives for being there.

Building authentic relationships with people takes time and it’s important to be transparent about your organization’s goals, timelines and objectives. Ensure that you can offer something of value to the community and that you won’t walk away as soon as you run out of funding.

Program managers should begin in their selected community by facilitating meetings with community organizations, leaders and residents to build relationships and discover what the strengths and needs of the community are. Facilitating - rather than attempting to create new objectives and/or coming into a community with “solutions” - is a critical aspect of climate justice work. Members of frontline communities understand the systemic oppression and racism that has placed them at the forefront of the climate crisis. Community members’ voices should be centered, and their experiences and knowledge amplified, to help raise awareness of these injustices. The community should be asked to determine what type of climate action projects are

feasible for them, the project spaces to be utilized, desired outcomes of those projects, and then be engaged in executing those projects.

Communities are more socially resilient when multiple generations work together. RiSC strives to create intergenerational spaces that bring students and adults together to learn and take action to mitigate climate impacts in their neighborhoods. In this way, RiSC can build both social and ecological resilience.

Program Setting

The RiSC program was initially developed around the vulnerability of New York City's coastlines to climate change. It has since evolved to center the communities and people who are most at risk from climate impacts. We realized that we cannot build resilience to climate change without understanding and addressing the systemic racism and poverty that put some residents at higher risk of climate harms than others.

While the current program model focuses on frontline coastal communities and impacts of flooding and erosion, the model itself can be adapted to address additional climate impacts such as heat, drought, hurricanes, and wildfires. NWF is working on the development of these additional adaptations.

Curriculum Adaptation

Teachers, community partners and participating educational partners should collaborate to review and adapt RiSC curriculum materials together to ensure that they reflect their community's culture, history, geography, current and future climate impacts and resiliency needs. All should ensure that enough time is allocated to resource adaptation and that community leaders and local advisors are consulted about content. **(See Appendix #4 for RiSC Curriculum Models)**

Program Implementation

The following components and tools were determined to be key criteria and considerations for RiSC implementation:

Professional Development

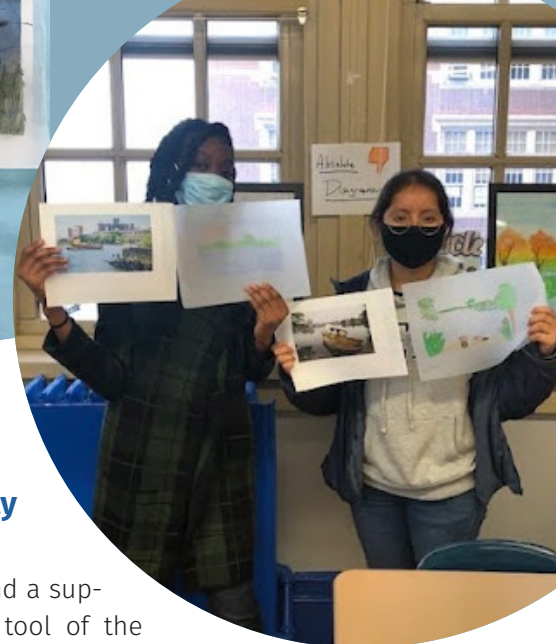
Professional development (PD) is critical to ensure that teachers are prepared and ready for implementation. Ideally, the PD is 2-3 days in-person so educators can experience first-hand some of the curriculum components, field

trips and action related activities. PD should also continue throughout the program year, with consistent check-ins and site visits with program providers. It is also suggested that the program providers support the development of a teacher network or cohort to facilitate support and sharing of successes, challenges and resources. Key to this program has been compensating participating educators at rates that are commensurate with their roles and with local teacher union rates. This is a key equity issue that ensures the professional acknowledgment of the work these individuals are doing. NWF is currently working on the development of a standardized professional development model for RiSC. **(See Appendix #5 for Sample Professional Development Materials)**

Research Local Resiliency Projects

Although not required to implement a RiSC program, researching whether a chosen community has a local resiliency plan can help with student learning, lessons, experiences, community action projects and introduce the team to local scientific and technical staff. A resiliency plan typically includes principles and protocols that help communities understand their vulnerabilities to natural and manmade hazards, advance resilience measures that reduce risk, and avoid investments not highly adapted to a changing climate. The agency or office promoting the plan may provide resources and technical assistance to communities for implementation. It may also house a list of local resiliency projects being implemented or in development in a community. If the plans are publicly available, they can be used as a learning opportunity for students. Teachers may ask a resiliency professional to come and speak to students about the local resiliency project, its justification, cost, timeline for implementation, whether community input informed the plan, and what - if any - alternatives were considered. If said agency or office is open to student participation in assisting with the plan development or monitoring efficacy after project implementation, this bonus can help students gain valuable real-world skills and/or learn about trades or careers they may not have previously considered.

In our experience, frontline communities are not often engaged in developing resiliency plans, and resiliency planning is being done differently across the U.S. In Coney Island and other NYC neighborhoods, community leaders have chosen to design their neighborhood-based resiliency plans with input from residents, which designates commu-



nity members as first responders during emergencies. In their view, the work has to be done locally on the ground because help doesn't always come in time from outside. **(See Lower East Side's Disaster Plan (2017), "LES Ready!" as an example).**

Recruitment of School/Student Teams

Program leads should plan to recruit interested teachers into the RiSC program during the school year through a variety of available means including connecting with district superintendents, principals, curriculum specialists, reaching out to local teacher networks (BOCES), teacher unions, and/or Office of Sustainability, listserves and organizations that serve teachers, and social media. Ideally, teachers are recruited the school year prior to implementation, so they can participate in summer professional development. Recruitment tools should be adapted for each replication site.

Once a desired cohort of committed RiSC teacher leaders have been identified, program leads should make contact with school principals to ensure their buy-in for the program implementation in their school as this is very important to program success. Once principal support has been obtained, digital or paper program application forms should be provided to teachers at the beginning of the school year. Forms include a principal introduction letter, a student application form, a parent letter that requires parental signature/approval for school field trips and a media release for photography or filming that may occur during the program. A sample recruitment poster can also be included, to help teachers recruit students.

(See Appendix #6 for Sample Program Recruitment Materials)

RiSC Vulnerability Assessments

A key component and a supplemental learning tool of the RiSC program is the RiSC Vulnerability Assessment (VA). The RiSC VA expands students' learning by leading them on a tour of their school building, building perimeter, and surrounding community to learn about their critical infrastructure and vulnerability to various climate hazards. Students gain access to NOAA's digital tools to explore flood risk and open source digital tools to learn about the location of community assets such as transportation hubs, hospitals, police and fire stations, sewage outflow locations, community centers including emergency shelters, and other details such as tree cover, and demographics.

The RiSC 1.0 VA was divided into several sections aligned to OneNYC, the city's strategic plan: Natural Hazards, Building, Neighborhood, Infrastructure and Coastal Defense. Additional Coastal VA and Extreme Heat VA were developed for RiSC 2.0.

A RiSC Coastal Community VA was developed for RiSC 3.0 and shared with students and their families. The survey was intended to enhance students' awareness of resources and assets - or lack thereof - in their community. Using the knowledge they gained, they were able to make more informed decisions about community resource needs and the design of climate action projects to address gaps they found. **(See Appendix #7 for RiSC Vulnerability Assessments)**

Student Learning



Throughout the year, RiSC students gain a deeper understanding of their communities' most pressing climate impacts and the uneven distribution of these risks. Students examine the past and present-day coastal environment, the history of human impacts and colonization on the area and learn the foundational science of climate change.

RiSC teams choose among multiple forms of media to share their learning with their school community. Some highlights of the program and student activities are listed below. [\(See Appendix #8 for Sample Lessons and Activities\)](#)

Sea Level Rise Lessons

In 2022, NOAA produced a technical report on sea level rise using the most up-to-date sea level rise projections available for all U.S. states and territories and offering projections out into the year 2050. The [report](#) projects that sea level rise will likely rise by 2 feet by 2100. How much sea level rises will depend on how well carbon dioxide emissions are controlled. In the RiSC sea level rise lesson, students use NOAA's future predictions for sea level rise to mark how far inland water is predicted to reach, depending on various emissions scenarios in 2050, 2070 or 2100. Back in the classroom, they discuss how flooding might impact habitat, vegetation, and built structures, as well as what can be done to lower greenhouse gas emissions.

Oral History Interviews & Student Podcasts

As part of the RiSC curriculum, students learn what oral history is by listening to local recorded examples. Using maps that visualize tree density, flooding risk, and racial and economic segregation, they examine unequally distributed climate risks facing different communities. They use this information to discuss climate justice and the importance of addressing underlying social inequalities to increase community resilience.

Students develop and share their own climate stories and practice conducting one-on-one interviews for their podcasts. They create questions for oral history interviews with local residents. Through the activity, students seek to learn what changes residents have observed in their neighborhoods over time, both with extreme weather and gentrification. Using smartphone devices and the Anchor app, RiSC teams learn how to turn their oral histories into podcasts. These are shared with the residents they interviewed, online, and with their school.

Field Experiences

Providing opportunities for students to connect with their surroundings and environment is critical to getting them involved in on-the-ground action projects. Introducing them to the history of the land and its original peoples who cultivated and stewarded the land for thousands of years prior to colonization, is an important step to understanding a place. Students learn about the ways in which the environment was transformed through the processes of colonization and industrialization. Students gain a deeper understanding of the impacts of climate change and the preceding conditions that contributed to the vulnerabilities of frontline communities.

We suggest that a RiSC replication incorporate two core field trips embedded into the curriculum:

1. One in the fall so that students get to see firsthand their community's most vulnerable areas and infrastructure, familiarizing them with resiliency vocabulary, and helping them to observe and understand local climate impacts and challenges.



- 2. A climate action field trip in the spring, with community members and educational partners, that addresses a community resiliency need or helps to mitigate a local climate impacts.

Some teachers may choose to build in additional field trips. This could be a visit to your local partner organizations sites or to see other resiliency efforts around your city or town. **(See Appendix #9 for Sample Field Guide)**

Community Action Project

Community action projects that mitigate a community climate impact are essential for providing students with a sense of agency and hope that they can do something tangible to help address the climate crisis locally. Research – and our own program evaluation – shows that action is an effective antidote to the immense climate anxiety that youth are experiencing. Working with community partners to identify a climate impact in a community that students can take part in mitigating – or calling attention to – is a critical component of RiSC.

Frontline communities are facing a number of climate impacts and may have a variety of needs including access to clean, affordable energy or protection from wildfires. Program leads - working with local residents, schools, community partners, local decision-makers, and even corporate partners and/or local businesses - should assess the community’s needs together and learn about any existing projects already underway.

For example, in 2019, RiSC students learned about urban heat islands; they studied data on increasing heat-related deaths that were most prevalent in communities of color, and learned about the role of trees in cooling the environment. They looked at tree maps by zip code and soon realized that their community lacked trees when compared to other wealthier neighborhoods. By teaming up with educational partner Trees New York, which secured the appropriate permissions and local tree species, students were able to plant trees on their school campuses. In 2021, students learned about climate impacts - such as sea level rise – fac-

ing Coney Island’s shoreline and impacting public housing residents living adjacent to a local beach. Dune restoration had already been initiated in a section of beach adjacent to peoples’ homes and community partners wanted that to continue. With NYC Parks, the land manager, and educational partner American Littoral Society, which procured the beach grass, students planted tens of thousands of plants to stabilize the dunes that provide a buffer against coastal flooding and erosion.

Community art projects are also a valid and powerful option. According to FEMA’s 2022 Inspiration Book: *Arts and Experiential Learning: Building the Foundation for Arts and Experiential Learning Partnerships for Mitigation and Resilience*:

“Art is all around us—in murals, sculpture, literature and music. It has the power to spark conversations, build risk awareness, grow a community’s intuitive understanding of place, and boost civic pride that can strengthen resilience-building efforts. Art can resonate deeply with people, bonding communities and inspiring civic creativity around many things, including mitigation that could otherwise be difficult to initiate.” **(See Appendix #10 for Sample Community Action Projects)**



“Throughout the school year, I witnessed the passion and excitement on my students' faces as they learned and advocated for climate change and climate justice.”

- Aaron But, John Dewey High School, Chemistry Teacher

Culminating Community Event

Each year, as part of the RiSC program, RiSC teams participate in a culminating community event at the end of the school year. The overarching goal of the intergenerational open house is to increase community awareness and civic participation in resilience matters. Students share their learning and present climate action projects created during the program. These have included presentation boards about redlining, physical models of resilient coastline designs, and booths where students interview attendees about their experiences with climate impacts. One middle school team created a RiSC board game that included questions about Coney Island history. Partners are invited to table at the event which includes activities, giveaways, and refreshments. Guest speakers have included an Indigenous activist, a staff member from the Office of Emergency Management, elected officials, community partners and funding agencies. In sharing their learning with the community, students gather feedback on their ideas, and engage in dialogue with others on how to build more climate resilient communities. **(See Appendix #11 for Culminating Community Event)**



“This past year students in the RiSC program at Liberation Diploma Plus High School in

Coney Island had the opportunity to work on environmental justice and coastal resiliency projects in their native Coney Island..... We now have a group of talented young folk who can confidently say they know how to revegetate dunes and know how to talk to community members about climate change and coastal resilience.”

- Abby Jordan, RiSC Team Instructor, Liberation Diploma Plus High School



Postcards From the Future activity at RiSC Community Open House, Coney Island, NY.

What's Next

"RiSC's long-term goal is to provide youth with the knowledge, skills, and tools they need to successfully combat climate change and its impacts. To make progress toward that goal, project partners have identified two key prerequisites for effective climate action: a knowledge of the social and economic inequities that underpin and exacerbate climate change's myriad threats to human communities and the natural world, and a knowledge of how personal and collective action can work to mitigate these threats. The fact that RiSC students have emerged from the program hopeful about the future and committed to taking action against climate change is a strong testament to the effectiveness of this approach, and bodes well for the program's future. By combining science, history, social-emotional learning, and civic engagement, RiSC has created a model of environmental education that can be utilized within school districts all across the US. It is now left to others to carry this work forward." (Third Party Evaluation or RiSC Program Report, 2023)

RiSC is an award winning, dynamic climate education and action program that has proven to have important impacts on the students, educators and communities in which it has been implemented. Our youth and the communities in which they live deserve to be educated, prepared and provided with hope when it comes to the climate crisis and the impacts it has on their daily lives and their futures. Although there is a great deal of work to be done to ensure that this program is replicated in a way that ensures its fidelity, we are excited to begin the next chapter of this process and push replication



forward to ensure that we not only reach more students, educators and communities, but we have maximum impact on the ground in these areas.

RiSC Integration With EcoSchools

NWF has identified the need for a less intensive RiSC program that can serve as a marketing tool and an "on-ramp" to the standardized RiSC program model. NWF is working to create and implement "An Introduction to RiSC" as part of NWF's EcoSchools US program. Utilizing a series of Eco-Schools Action Cards, NWF will build awareness around the program, the need for climate education, and strategies for taking local action to support climate resilience. This introduction via EcoSchools US would not provide program support beyond the free, downloadable tools and resources available through the online EcoSchools US program site.

Adaptations for Program Settings (Climate Impacts)

As stated above, the current RiSC model is centered on frontline coastal communities – water-oriented (fresh, salt and brackish). NWF plans to adapt this model to also address additional impacts of climate change such as heat, drought, extreme weather – hurricanes, and wildfires. There is a great opportunity to expand the reach of this program by developing adaptations to the RiSC program to address other climate related impacts.

Standardized Curriculum and Professional Development Models

Currently the RiSC curriculum, which has evolved over several years, is specific to New York City. There is a need to develop a more standardized RiSC curriculum that replication sites can utilize and adapt/enhance to their needs. In association with this curriculum, NWF will also be creating a standardized professional development model that can be used to train community and partner organizations and educators.

Enhanced Green Career and Job Readiness for Youth

In order to build a climate ready workforce, there is a need to engage youth in green career readiness and training. NWF would like to enhance the RiSC program to include stronger and more transitional green career program components. This could include development of a RiSC fellowship to train youth to become the next generation of climate practitioners. There is a need for a workforce that can help communities become more climate resilient, as outlined in the federal American Climate Corps. This includes jobs to ‘conserve our lands and waters, deploy clean energy, implement energy efficient technologies, tackle climate change and advance environmental justice’ (see <https://www.whitehouse.gov/climatecorps/>). Offering youth job skill development in these critical areas enhances their interest and qualifications for good paying careers while simultaneously strengthening communities’ climate readiness.

It should be noted that jobs in other sectors including tech, the sciences, agriculture, transportation, architecture, teaching, engineering, law, and other professions will also need skilled practitioners!

NWF encourages interested partners to contact us directly for more information and support as they embark on a RiSC replication strategy. (FanoE@nwf.org)



“Climate and resiliency education is so important because it empowers our children to learn and take actions that address both risk and social injustice. Many of the

solutions that will address climate change can, and will, also address social injustice. These are two of the most pressing issues facing our students and our world, and our students deserve an opportunity to have a voice and lead in this work.”

- Lynn Shon, teacher and RiSC curriculum designer, co-founder Brooklyn Harbor Middle School



Case Studies

U.S. Virgin Islands (2018-2020)

In 2018, FEMA agreed to provide a grant to NWF's affiliate in the U.S. Virgin Islands (USVI), the Virgin Island Conservation Society (VICS), to adapt RiSC there after the Islands were slammed by two consecutive Category 5 hurricanes, Irma and Maria. At the time, VICS ran the Eco-Schools program in the USVI. VICS staff attended a summer training for New York teachers virtually and gained access to shared folders that included curricula and program materials. NWF's Texas affiliate visited the USVI before the hurricanes and worked with VICS for several months to help adapt the RiSC curriculum and activities. The USVI's adapted program was renamed the Eco-Schools Disaster Risk Reduction Management Pro-

gram, borne out of a response to the 2017 hurricanes, and took place in seven high schools across three islands, St. Croix, St. John and St. Thomas. USVI students took field trips to learn about their islands' ecology, about climate change, flood mitigation and mapping and designed a school resiliency action plan. A *Disaster Risk Reduction Toolkit: A Student Centered Vulnerability Assessment* was created as one of several final products and was adapted from the *Eco Schools Indian Ocean Disaster Risk Reduction Toolkit* - an initiative of the Indian Ocean Commission funded by the European Union. Specific campus resilience designs were created to encourage students to become active stakeholders and problem-solvers in addressing the resiliency and sustainability of their individual schools.

Teachers and RiSC partners work to adapt curriculum for USVI.
Photo: Marya Fowler



Texas (2020 - Present)

NWF's Texas staff recognized an opportunity to adapt RiSC to address the many climate impacts that Texas schools were experiencing. Flood-prone neighborhoods in Houston, are typically home to historically marginalized communities. During the 2022-2023 school year, students from eight Houston middle and high schools participated in NWF Texas's adapted RiSC program called **Student Climate Resilience Ambassadors** (SCRA). As part of the SCRA program students learned how to combat the causes of flooding in their neighborhoods and promote healthy watersheds. They used information from an adapted RiSC Vulnerability Assessment to design, implement, and maintain programs to

mitigate flooding, such as creating pocket prairies and rain gardens at their schools. During six community action days, SCRA helped students develop habitat for wildlife along 3.5 acres of the Sims, Buffalo, and Greens Bayous. This included 3,500 native prairie plants and 500 trees. A related field experience, in partnership with the Galveston Bay Foundation, helped students connect the dots between the actions they took to improve their local watershed and the health of the larger Galveston Bay ecosystem. This grant-funded program was funded by the EPA.

Students at Forest Brook Middle School in Houston participating in SCRA, NWF's adapted RiSC program, created a bioswale to mitigate stormwater.
Photo: Marya Fowler



New Jersey

(2021 - Present)

Beginning in 2021, FEMA agreed to provide a grant to NWF's affiliate New Jersey Audubon (NJA) to adapt the RiSC program in vulnerable coastal communities. In September 2022, led by NJA's Education Director, three teachers from three schools, having attended training hosted by NWF in New York, began meeting bi-weekly to review and adapt existing RiSC lessons and create new ones. Before working with students, each teacher located and reviewed vulnerability assessments or mitigation plans created for their communities.

In April 2023, the Atlantic City Utilities Authority (ACUA) provided tours, for all three schools,

of the Haneman Environmental Park's Landfill and recycling center where they discussed

impacts from major storms on the landfill. The ACUA also took students to their wastewater treatment plant, located near the shoreline, where the structures are being degraded by saltwater intrusion and wastewater overflows where the bulkhead is too short to provide enough protection during

large storms. They also visited the wind farm and solar array at the facility and furthered their classroom discussion around renewable energy. Students from one community also took a walking field trip to their local beach to conduct the sea level rise lesson there. In May 2023, NJA hosted a culminating event at a local Nature Center. The event was attended by government officials and 115 students from the three RiSC schools. As part of organized activities, students put on waders, pulled seine nets through the water, and discussed how different species may be affected by sea level rise and warming water temperatures. Teams built "model dunes" on the beach and tested the dunes' strength against a surge of water to witness firsthand the risk that owners of waterfront homes are facing, especially given more frequent and severe tropical storms. Students shared climate action projects with community leaders and engaged in discussion with guest speakers - including two local Mayors - about the beach erosion that has taken place in their community and the local and state response to the impacts, which was playing out in the news.

NJA has made RiSC a cornerstone climate education program, (see <https://njudubon.org/climate-education/>)

RiSC students in New Jersey visit the Atlantic City Utilities Authority (ACUA) to learn about the wastewater treatment facility and wind turbines to learn about renewable energy. Photo: courtesy New Jersey Audubon



Puerto Rico

(2022 - Present)

NWF partner Organización Pro Ambiente Sustentable (OPAS) in Puerto Rico agreed to use an 18-month EJ4Climate grant it received from the Commission for Environmental Cooperation in Canada to adapt RiSC in Puerto Rico beginning in 2022. An additional small grant was provided by FEMA via NWF in 2023.

An OPAS project team spent a year (2022-2023) planning for the program's adaptation. They hired a curriculum specialist to adapt and translate the RiSC curriculum into Spanish. NWF's New York RiSC project team visited Puerto Rico in June 2023 for a multi-day retreat with the entire team to learn about the island, assist with the program adaptation, and answer questions. A project coordinator was hired and worked with OPAS staff to visit and recruit schools in the frontline community of Loiza. One middle school and

one high school agreed to participate. Teacher training by OPAS's RiSC coordinator began in October 2023 with three teachers from each school and was successful. In November 2023, students from both schools experienced their first field trip to a community-based non-profit organization in the mountains that promotes solar energy, biodiversity conservation, and environmental advocacy. Students all got RiSC t-shirts. The RiSC coordinator conducted outreach to a conservation organization that is engaging community members in restoring dunes and mangrove forests on the island, with the goal of strengthening resilience to future storms. The hope is that RiSC students will begin assisting with these restoration projects.



RiSC students in Puerto Rico visit Casa Pueblo, a community based organization, on a field trip to the town of Adjuntas.

Photo: OPAS

