



MURI ENVIRONMENT CARE

MURI STREAMS, WATERWAYS & LAGOONS ECOLOGY PROJECT

INTERIM REPORT #2

NOVEMBER 2023

Our project has not only surpassed initial expectations in expediting the discovery of riparian restoration in Rarotonga but also enriched our knowledge and expertise in the field. Throughout the journey, we've acquired new insights, developed innovative systems, and forged numerous valuable partnerships. We have also started to hone in on our unique skills and opportunities as educators. Transitioning from a humble shack surrounded by a few plantings, our nursery has blossomed into a vibrant, high-functioning native plant laboratory with many successes and even more essential lessons. The nursery acts as a lab for us to learn more about the species that are either rare in the built landscape or non-existent. These plants are the tools we can use to restore ecosystem services that clean our water, provide habitat and habitat connectivity for native species and more.

We have successfully stabilized stream banks and achieved significant progress in devising systems to plant native trees in challenging growing conditions and environments highly prone to disturbance.

We have welcomed hundreds of visitors and engaged dozens of volunteers in our projects. Through various channels, including online platforms and newspapers, we have disseminated information and sparked community dialogues concerning native plants and stream conservation. Additionally, we have successfully forged relationships with a diverse array of professionals and enthusiasts in the field.

This report illustrates a journey from grassroots to growth, significantly propelled by vital funding. Through diligent work, we've begun shaping systems and realizing plans that are visibly taking hold. Just like the freshly planted trees along the streams, not all of our initial ideas and interventions took immediate root, but with steadfast nurturing, they are now showcasing tangible growth. The pivotal support from the GEF fund during our

foundational phase was crucial, enabling us to solidify our roots and commence a phase of vibrant development.

ASSESSMENT OF OVERALL PROJECT GOALS

ROBUST PARTNERSHIP DEVELOPMENT

Our ongoing stream restoration efforts are seeing support from government agencies, environmental NGOs, community leaders and local tourism operations. Muri Environment Care has forged robust partnerships with numerous organizations and groups, including:

- **Te Ipukarea Society (TIS)** have been collaborators on a number of educational programs. We are also now a native plant specialist for one of their nature-based solution coastal resilience projects.
- The **Ministry of Marine Resources (MMR)** has supported us with expertise and guidance in addition to the initial seed funding predating the GEF funding. We are in the process of procuring additional advisory assistance with the assistance of MMR.
- The **Cook Islands Natural Heritage Trust (CINHT)** plant portion of their database has been instrumental in the establishment and functioning of our nursery operations. CINHT has also given key guidance on finding native plants.
- We are now official partners with New Zealand's **Volunteer Services Abroad (VSA)** and already have received many keen VSA volunteers. We will host our first VSA Infrastructure Cook Islands assignment starting early 2024 and we believe this relationship will be very fruitful.
- We recently welcomed our first volunteer from **Global Volunteers**, achieving notable success. Eric not only contributed numerous ideas and skills but also assisted in the construction of new benches in our seed house, while also obtaining valuable experience from his collaboration with our team.
- We have initiated a collaboration with **Te Ara o Te Akau**, a local coral restoration NGO with the understanding that stream dynamics can massively impact the nearshore coral wellbeing.
- We have partnered with **Tourism Cook Islands** as one of their Regenerative Travel Experiences, helping pave a new way forward for regenerative tourism
- We have also been in talks with the **National Environment Service** to find ways that they can support our missions as well as find additional funding.
- We have recently commenced collaboration with Ric Balfour, a Catchments Coordinator from the **NZ Landcare Trust**. Our work together has initiated training processes focused on stream assessments and has facilitated the collection of crucial baseline data. This

encompasses both the physical and chemical characteristics of the stream as well as a game-changing look at potentially of the species in the stream as well as in the catchment.



Figure 1. Kas Silk (MEC) out seed collecting and observing native coastal plants with Global Volunteer, Eric Fedeler. 08/2023

DEVELOPING EDUCATIONAL EXPERIENCES

Planting sessions have been conducted both at the nursery and our designated planting sites, where the educational experience extends beyond the act of planting. We integrate educational components that illuminate the many benefits provided by plants, encompassing aspects of biodiversity, ecosystem stability, and environmental health. These sessions strive not only to engage participants in ecological restoration but also to deepen their understanding of the symbiotic relationships within natural environments and the invaluable contributions of flora to our world.

Moreover, we've hosted nursery work days and stream planting events, aligning with schools to emphasize the unique attributes of each plant species and underscoring the crucial role plants undertake in restoring ecological services. These events are meticulously designed to ensure that future generations not only

comprehend but also intrinsically value these ecosystem services. We strive to build a foundation of knowledge and appreciation that will empower them to be stewards of the environment in the future, safeguarding and nurturing the natural world.

Through these diverse educational experiences, we aim to foster a sense of environmental stewardship among participants, ensuring that the importance of ecological conservation and restoration is recognized and perpetuated in forthcoming generations. Consequently, the educational facets of our project do not merely serve as an informative platform but also as a means to inspire and catalyze enduring positive change towards environmental sustainability.



Figure 2. Te Uki Ou Year 9 students getting an introduction to horticulture, learning how to transplant *Artocarpus heterophyllus* from seed tray to planter bag.



Figures 3 and 4, Apii Takitumu Year 6 students led by the National Environment Service celebrating World Wetlands day by doing a wetland survey and planting an ecodrain that flows into our nursery rain garden/constructed wetland. Brennan Panzarella (MEC Ecologist) discusses the filtering power and other benefits of native sedges in Wetland ecology.

ESTABLISHING A MULTIFUNCTIONAL CONSERVATION NURSERY

A pivotal component in the successful delivery of our riparian restoration pilots has been the robust and operational nursery, which served not only as a propagation area but also as an innovative laboratory for experimental learning about various species. In both nursery production contexts (e.g., seed trays and planter bags) and in real-world planting scenarios, the nursery facilitated comprehensive learning and development. Continuous innovation has been at the forefront of our strategy, enabling us to discover and implement optimal growing conditions through consistent troubleshooting and learning derived from our stock gardens, seed trays, shade houses, and standing areas. Notably, our seed collection team has recently accelerated its efforts, amassing new native species at an impressive rate. Navigating through the multitude of complexities involved in nursery operations demanded a steep learning curve in terms of expertise. Now, we are beginning to witness the tangible benefits emanating from this dedicated nursery/laboratory, as it has become instrumental in enhancing our restoration initiatives



Figures 5 and 6. Trialing two forest species to determine if their location is due to habitat preference or more as a refugia from human disturbance, *Alstonia costata* and *Meryta pauciflora*. NZ-based professional horticulturist and garden enthusiast touring the MEC nursery with Brennan Panzarella (MEC)

Fagraea berteriana, a species once prevalently incorporated into 'eis, the traditional flower garlands, has presented an enigma in its germination process for a duration spanning two and a half years. This species, with its delicate blooms and historical significance in our cultural practices, has demanded a nuanced understanding and unique approach to successfully facilitate its propagation and reintroduction into our ecosystems.

During our nursery work and planting sessions, a focused emphasis has been placed on illuminating the multifarious uses and substantial benefits that plants confer in the restoration of ecological services. We delve into discussions and practical demonstrations concerning:

- **Biodiversity Enhancement:** Highlighting the role of plants like *Fagraea berteriana* in augmenting floral diversity and providing habitats for various fauna.
- **Erosion Control:** Exploring how strategic planting can stabilize soil and prevent erosion, particularly in vulnerable areas adjacent to water bodies.
- **Water Quality Improvement:** Understanding how riparian vegetation can filter runoff and enhance the quality of water entering our streams and rivers.
- **Cultural Preservation:** Appreciating the intrinsic value of preserving and proliferating species that have historical and cultural significance to our communities.
- **Climate Resilience:** Discussing how a healthy, biodiverse ecosystem can be more resilient to climatic variations and potentially mitigate certain adverse impacts.

These sessions are not merely educational but are also crafted to be engaging and experiential, where participants can witness firsthand the tangible impacts and nuanced relationships within ecological restoration efforts. As we navigate through the challenges, such as the germination mysteries of *Fagraea berteriana*, we intertwine these learnings into our educational narrative, instilling an appreciation for both the scientific and cultural aspects of ecological restoration



Figure 7. Aerial Photo of the Nursery - 22/9/2023

DIGITAL ENGAGEMENT

Through strategic online Facebook campaigns, we have successfully conveyed our project's objectives to a broad audience, ensuring our goals resonate with the wider public. Moreover, we have garnered substantial digital engagement from a local community that is now thoroughly

informed about our pilot projects and their respective aims. Collaborations with professional media organizations and individuals have also been successfully established, resulting in a varied array of promotional content. This ranges from succinct promotional materials for our website to artistically crafted YouTube videos and features in newspapers and television broadcasts. Our multifaceted digital approach not only elevates the visibility of our initiatives but also fosters an informed and engaged community both locally and beyond. The following encapsulates a sampling of content that we have either directly produced or assisted in developing in recent times:

NEWSPAPER

Initiative to preserve Muri Lagoon

<https://www.cookislandsnews.com/internal/national/local/environment/initiative-to-preserve-muri-lagoon/>

Reviving Rarotonga's native flora

<https://www.cookislandsnews.com/internal/features/weekend/reviving-rarotongas-native-flora/>

Te Ipukarea Society : Nurture nature for our future

<https://www.cookislandsnews.com/uncategorised/internal/national/environment/te-ipukarea-society-nurture-nature-for-our-future/?fbclid=IwAR3EM0Did5L6SVxeJgebtimOypP-PtDY6eBXUCYSSvbpnwL-CgWKAZW1ZRg>

Muri restoration efforts backed by United Nations

<https://www.cookislandsnews.com/internal/national/local/environment/muri-restoration-efforts-backed-by-united-nations/>

Using nature to hold it all together

<https://www.cookislandsnews.com/internal/national/local/environment/using-nature-to-hold-it-all-together/>

Muri Beach Cleanup – protecting our oceans to protect our future

<https://www.cookislandsnews.com/national/environment/muri-beach-cleanup-protecting-our-oceans-to-protect-our-future/>

Ridge to Reef expedition a celebration of Earth Day

<https://www.cookislandsnews.com/internal/opinion/ridge-to-reef-expedition-a-celebration-of-earth-day/>

Cooks toasts World Tourism Day 2023

<https://www.cookislandsnews.com/internal/national/economy/cooks-toasts-world-tourism-day-2023/>

Volunteers celebrate World Wetlands Day

<https://www.cookislandsnews.com/national/environment/volunteers-celebrate-world-wetlands-day-with-establishment-of-nursery/>

Youth Media Team learns the ropes with Muri Environment Care Group

<https://www.cookislandsnews.com/national/environment/youth-media-team-learns-the-ropes-with-muri-environment-care-group/>

Tereora students help Muri project before holidays

<https://www.cookislandsnews.com/national/environment/tereora-students-help-muri-project-before-holidays/>

Tourism celebrate 20th Vaka Pride Awards

<https://www.cookislandsnews.com/national/economy/11000-handed-to-winners-of-20th-vaka-pride-awards/>

Native nursery plan to protect Muri's lagoon

<https://www.cookislandsnews.com/national/environment/native-nursery-plan-to-protect-muris-lagoon/>

'Muddy buddies' eco stream walk

<https://www.cookislandsnews.com/internal/opinion/muddy-buddies-eco-stream-walk/>

OPINION: Caring for Muri Lagoon means caring for our streams

<https://www.cookislandsnews.com/internal/opinion/editorials/opinion-caring-for-muri-lagoon-means-caring-for-our-streams/>

COOK ISLANDS TV SEGMENTS

Muri Environment Care Group had a very successful planting effort with the volunteers from Tereora College up the Parengaru Stream. With the guidance of Jo Holley, the young ones presented and shot their own coverage of the event. <https://fb.watch/lhXisq96QH/>

The United Nations Resident Coordinator for the Cook Islands, Samoa, Niue and Tokelau has been visiting and getting updates on the various projects around Rarotonga that received grant funding. One of the sites visited was the Muri Environment Care Nursery.

<https://www.facebook.com/cookislandstelevisionnews/videos/735996138163347>

World wetlands day build-up: <https://fb.watch/lhWEQI5JrK/>

World Wetlands Day: https://fb.watch/bcctnY1_zt/

FACEBOOK

Facebook is very popular in the Cook Islands (a country of only 15,000 people) as a medium for important communication. We created a Facebook page in addition to our long-term Facebook group. This Facebook post reached nearly 9,000 people

<https://www.facebook.com/murienvironment/posts/222497370822089>.

We have created a website with the aim of enlightening 'deep divers' while also dynamically engaging potential volunteers and donors in a substantial and inspiring way. <https://mec.org.ck/>

PILOT STUDY RESULTS

1) Ecosystem Engineer Species Trials

Our efforts to stabilize the streambank have largely proven successful, as highlighted in our update. We have successfully established the majority of the stream bank along the 120-meter section of the Parengaru stream, which serves as our riparian restoration trial area. Additionally, there's observable evidence that the vetiver hedgerows are contributing to streambank stabilization, demonstrated by an absence of erosion in areas where the vetiver is established. Despite a significant lack of volunteer labor, we have managed to achieve substantial progress.



Exceptional Tasmanian Volunteers, Hugo Bishop and Jessica Bowring, Contributed to the project on a weekly basis for four months. Here they are planting Vetiver hedgerows following the excavator-assisted scraping of local streams after the Rarotonga king tide destruction of mid 2022.

Vetiver planting has been the vast majority of the successful efforts to stabilize the soil on the stream banks. This has been evidenced by the lack of further slippage and erosion in the areas where vetiver is well established. The survival rate for vetiver has probably been around 65-75%. The reasons that it hasn't survived have been: a) uninformed mowing operators mowing vetiver down below its regenerative ability point. b) chickens scratching for some of the only uncompacted and moist soil in the dry seasons and then loose cows trampling and eroding away where vetiver was planted. c) large unexpected rain events washing out the vetiver before it has a chance to establish.

The one great success so far of the riparian restoration project is the fully established vetiver plants showing clear signs of streambank stabilization. Because our pilot stream, Parengaru, often runs dry, we have also managed to establish vetiver plantings across the stream. This effort matches with our restoration goals of increasing turbidity as well as potentially slowing flows.

There has also been the byproduct of coastal projects asking for our plants to stabilize coastal works as well. Which will play a part in our GEF round II funding.

We have also developed the methodology for efficient and effective vetiver restoration planting that will feature prominently in our volunteer programs that have accelerated our planting and also are contributing to the Regenerative Tourism



Figure 5. Aerial photo of Vetiver plantings on the shaded section of the 120m planting site. 17/3/23

2) OBSERVATION-FOCUSED PASSIVE RESTORATION

In areas of our restoration site with minimal interventions, which serve as 'control' plots, passive restoration paired with astute observation has unfolded the intrinsic progression and resilience of riparian ecosystems. This has unearthed invaluable insights into species thriving during stream regeneration and subtly enhanced natural recovery processes through our minimal interventions.

These areas not only strike a delicate balance between respecting nature's inherent restoration abilities and implementing minimally invasive techniques but also metamorphose into dynamic 'classrooms.' These provide invaluable opportunities for community engagement and education about the subtleties of ecological restoration and vegetation management. Our

methodology not only amplifies our understanding of ecosystem dynamics and species behavior but also cultivates a synergistic approach between humans and nature, advocating for cooperation with nature wherever possible, diverging from oft-encountered adversarial restoration practices.

DISTURBANCE-LOVING PLANTS

Embracing, rather than lamenting, the aggressive nature of ruderal species is pivotal. Wholeheartedly accepting natural phenomena and deriving knowledge from the persistent, adaptive qualities of weeds have given us a richer understanding of management necessities, especially in our streambank stabilization areas.

Our newfound understanding of these ruderal and occasionally invasive species has informed our ecological understanding of processes across numerous other island ecosystems as we continue our search for additional species for the nursery.

A crucial insight from this pilot is that very few native species regenerate from a recently cleared stream, and these areas can become dominated by ruderal vines if not adequately managed. While this offers quick protection from rainfall-induced sheet erosion, it provides limited rooting protection against the erosive forces of a heavily altered stream and landscape.

Consequently, we believe that a 'do nothing' approach is misaligned with the current engineering and ecological demands of our streams.

MINOR INTERVENTIONS, BIG RESULTS

The various ruderal vines i.e. *Momordica charantia* and *Mikania micrantha* are very aggressive in growing over streambank plantings and even up into our top bank plantings. These vines are important to keep under control and are a main threat to both the establishment of our early stage plantings but also are a major part of what looks 'untidy' to onlookers.

SHADE DYNAMICS

A quarter of the stream flows underneath two towering tamarind trees - ruderal vines did not find competitive advantage in these shady spots and this reinforces our understanding that providing some shade to the stream not only will improve a number of in-stream ecological conditions but could also reduce our maintenance requirements that can be a long term strain on labor resources.

A FEW RESILIENT NATIVES

Throughout the process of natural regeneration in our restoration sites, several insightful observations have come to light, particularly regarding species that demonstrated remarkable adaptability and resilience in disturbed stream bank environments.

Two species have notably stood out in this context: one native, *Macaranga harveyana*, and one Polynesian-introduced species (unspecified here). Both have showcased a notable propensity to

germinate under challenging conditions and exhibited a robust capacity to compete with ruderal vines and grasses.

Macaranga harveyana, in particular, has displayed impressive regenerative capabilities and as soon as we can find it seeding, it will become an essential research species for future riparian planting - its large leaves and ruderal qualities could make it an invaluable component to the transition to a more stable seral stage.

In addition, *Eleaeocarpus floridanus* has caught our attention as one of the few woody, longer-lived native trees that demonstrates promising potential for survival and growth in the observed settings, although the observation ends abruptly and might benefit from additional details or specific instances of observed resilience or adaptability to support the statement.

UNGULATE EROSION

Upon the stabilization of the streambank, post-scraping erosion, and as the streambed transitioned back to a stonier constitution as opposed to eroded soil, another critical insight was brought to the fore regarding the impact of stray livestock.

Evident markers of their presence and influence on the site, such as clear hoof marks and observable erosion caused by ungulates accessing the stream, became unambiguously apparent. The frequency of visibly browsed trees only solidified this observation, becoming more commonplace than their undisturbed counterparts, indicating a clear and pressing need for strategies to mitigate these impacts moving forward.

These findings not only enrich our understanding of the challenges and opportunities presented by the restoration of these areas but also guide our future strategy and intervention approaches to ensure more sustainable and successful restoration moving forward.

Integrating these learnings into our ongoing and future projects, we anticipate navigating subsequent restoration efforts with an enhanced, more nuanced understanding of both the potentialities and the hurdles intrinsic to ecosystem restoration in similar contexts.

FOREST STREAMS

Numerous team field trips up to forested streams also served a very important role in acting as a 'control' in seeing that without, or with minimal human intervention, what a stream tends to look like.

Even though the streambanks are far steeper and higher, erosion is much less prevalent due to a dense network of roots and soil covered with debris, ferns or other understory plants. The streams are well shaded and the stream beds meander, creating pools, steps. Traversing the lengths of the Ngatote, Parengaru, Turoa, and Totokoitu streams from their forest origins to the sea and back again

reveals the crucial role of textured flows. The abundance of exposed rocks not only highlights the natural slowing and sinuosity of the water but also contrasts sharply with the paucity of bare soil typical of human-altered landscapes. These rocky features, by disrupting the water's momentum, create diverse flow patterns that can mitigate erosion. Their presence or absence has become a visual indicator for assessing recent erosion events and detecting signs of unnatural alterations to the stream's course.

3) Returning Natives to Rarotonga's Streams

The streams in Rarotonga's forests are likely some of the cleanest in the world. However, as they intersect with areas of human habitation, they undergo substantial changes and may not be accorded the same reverence they once were.



FIGURE 6. Anne Tierney (MEC), Volunteer Tiana Koronui collect native coastal seeds.

Native plants, inherently adapted to local climates and soils, fundamentally support the indigenous pyramid of life, serving as its very foundation. Our sustained commitment to these plants has consistently informed our project's direction and resulted in tangible success, primarily witnessed within our nursery environments. Establishing the country's first native nursery presented considerable challenges due to limited available data on the majority of species involved.

Refining our approach to riparian plantings to prioritize quality over quantity has led to an enhanced focus on prolonged growth periods and improved site protection for our native trees. Additionally, our ongoing engagement with school groups serves dual purposes: it elevates the importance of plantings and utilizes planting days as an educational opportunity to acquaint students with species to which they might otherwise not be exposed.

A number of the native plants with which we have had success are experiencing significant declines in population. Absent intentional propagation and planting efforts, their extinction on the island, especially among coastal natives in ecosystems heavily impacted by human activities and development, appears plausible.

Our approach integrates conservation efforts with educational opportunities, subtly intertwining the growth of native species and knowledge dissemination among the younger generation. This strategy is poised to not only facilitate the preservation and proliferation of our region's botanical heritage but also to maintain the ecological balance they underpin, in a methodically measured and scientifically grounded manner.

Successfully acquired native plants

Sophora tomentosa

Guettarda speciosa

Hernandia nymphaeifolia

Hernandia moerenhoutiana

Ipomoea pes-caprae

Cannavalia sericea

Heliotropium anomalum

Tourneforetia argentea

Sesuvium portulacastrum (successfully rooted cutting)

Elaeocarpus floridanus

Triumfetta procumbens

Tephrosia purpurea

Meryta pauciflora

Fagraea berteroana

Alyxia stellata

Vitex trifolia var. *Trifolia*

Scaevola taccada
Thespia populnea



Figure 7. Growing in the middle of the photograph, these seed-grown *Sophora tomentosa* at the nursery potentially double the number of known individuals on the island. We were told that these may be abundant on Motu Tapu which we plan on asking for permission to survey.

Acquired but waiting to establish:

Wollastonia biflora (but yet to reach maturity)

Planchonella tahitensis

Pemphis acidula (potentially better suited at stream mouth or other coastal settings)

Pterophylla samoensis

Euphorbia fosbergii

Dodonaea viscosa

Alstonia costata

Allophylus timoriensis

Alphitonia zizyphoides

Piper latifolium

Pisonia grandis

Osteomeles anthyllidifolia

Metrosideros collina

Acquired/germinated Polynesian-introduced

Piper methysticum

Broussonetia papyrifera

Cordia subcordata

Artocarpus atilis

Alocasia macrorrhizos

Pandanus tectorius

Cordyline fruticosa

Aleurites moluccana

Bischofia javanica

Casuarina equisetifolia

Adenantha pavonina

Musa troglodytarum

Saccharum officinarum

Santalum spp.



Figures 8 and 9: Innovation in protecting the plantings. After extensive research into electric fencing, we decided to make our own 'cages' for the native plants. We also are trialling vetiver hedge barriers. The central plants in both photographs, *Guettarda speciosa* and *Aleurites moluccana*, all 9 previously planted were destroyed or browsed before the above pictured increases in protection.

The only native tree that we planted that the stray livestock did not browse was *Sophora tomentosa*.

So far, it has been a massive learning experience in figuring out techniques that aren't destroyed by stray livestock, wild animals. The destruction caused by wild animals was a major setback that we are only now starting to overcome.

Unless there is a major influx of funding, widespread fencing is not going to be a feasible model given the cost constraints and labor restraints. Once we manage to get a few trees safely above grazing height, we will be able to observe ecological shifts.

For now we will keep operating under the assumption that overall botanical diversity will beget overall biodiversity and that more complex ecosystems will support more life.

One development that seems to have really assisted is that we have been doing a lot of the mowing in and around the planting area as we figured if there is going to be mowing, we might as well do it ourselves as an untrained eye can perceive vetiver to be an overgrown weed.

In addition, trials have been initiated utilizing vetiver as a barrier surrounding the top bank plantings, yielding varied outcomes. The implementation of vetiver has proven particularly effective in signaling to mowing operators, establishing a discernible pattern of plantings. Future initiatives will encompass the fabrication of plastic tree guards utilizing repurposed, donated piping to further augment our solutions aimed at protecting our plantings.

While it has occasionally been disheartening to witness the undoing of our diligent efforts, this constitutes the requisite rigorous work that is imperative for project success. Our sustained effort is manifesting positive change, adhering to the principle that persistent endeavors facilitate valuable outcomes.

The nursery is presently cultivating numerous new native species, which are in various stages of germination and growth, slated for utilization in the imminent future. As the nursery transitions into a phase of substantial operational capacity, it is anticipated to substantially bolster both the growth and learning at the planting sites, particularly in light of the development of robust systems designed to enhance tree protection.

Additionally, several plants that have been recently acquired and that possess significant cultural value are expected to resonate positively with the community. This, in turn, is projected to facilitate the garnering of support, enabling us to recruit volunteers and secure assistance from land-owning families.

4) Storing water in the landscape

While the original intention of this pilot was to design and implement swales on contour, feedback from the community and practical considerations necessitated a more adaptive initial approach.

Taking into account collaborative dialogues with landowners and prioritizing alternative strategies for water storage and flow management—especially given the visibility and multi-family ownership of areas adjacent to our restoration sites—we identified rain gardens as a viable solution. The initial rain garden was strategically established at the nursery, enabling us to troubleshoot and refine our methodology before engaging the support of ICI and other environmental groups.

Rain gardens embody numerous ecological and aesthetic benefits, marking them as a distinguished choice in various landscapes. They function both as a sponge and a filter, absorbing rainwater runoff from impervious surfaces such as rooftops, sidewalks, and driveways, and aiding in groundwater recharge. Implementing rain gardens can alleviate pressure on municipal drainage systems, diminish flooding risks, and mitigate the impact of water pollution in adjacent rivers and streams by filtering and purifying runoff through vegetative components.

Moreover, rain gardens enhance biodiversity by serving as valuable habitats for local flora and fauna, providing resources and refuge for various species. They also add aesthetic value to environments, augment green spaces, and create opportunities for community interaction and education. Further, they exemplify sustainable practices, illustrating how environments can be effectively managed to balance ecological integrity with visual appeal.

Our journey with rain gardens involves methodical planning, diligent execution, and a commitment to environmental stewardship, ensuring our efforts amplify the natural beauty of our restoration sites and fortify them against ecological challenges posed by development and climate change.

This endeavor underscores our unwavering commitment to implementing sustainable, science-backed solutions to ecological challenges, safeguarding the vitality of our natural landscapes for future generations.

