

DPLR1\1035

Darwin Plus Local - Final Report (1)

Officer: Jessica Magnus

Section 1 - Darwin Plus Local Project Information (Essential)

Project Reference Number

DPL00007

Q1. Project Title

No Response

Overseas Territory(ies)

Bermuda

Lead Organisation or Individual

Nicholas Coelho - BZS Micro Forest Officer

Partner Organisation(s)

Bermuda Zoological Society

Value of Darwin Plus Local Grant Award

£50,000.00

Project Start Date

01 April 2023

Project End Date

31 March 2024

Project Leader Name

Nicholas Coelho

Project Website/Twitter/Blog etc.

<https://bamz.org/support/bzs-micro-forest-project>

Report Author(s)

Nicholas Coelho

Report Date

25 April 2024

Project Summary

No Response

Project Outcomes

Checked	Biodiversity: improving and conserving biodiversity, and slowing or reversing biodiversity loss and degradation;
Checked	Climate Change: responding to, mitigating and adapting to climate change and its effects on the natural environment and local communities;
Checked	Environmental quality: improving the condition and protection of the natural environment;
Checked	Capability and capacity building: enhancing the capacity within OTs, including through community engagement and awareness, to support the environment in the short- and long-term.

Section 2 - Project Outcomes (Essential)

On a scale of 1 (high – outcome substantially exceeded) to 5 (low – outcome substantially did not meet expectation), how successful do you think your project has been?

1 - Outcome substantially exceeded

Project outcomes and justification for rating above

i) Actual Changes Achieved: The project has brought about significant positive changes in Bermuda's environment and community. By planting native-compatible and endemic plants using the Miyawaki method, the project has increased biodiversity and forest cover exponentially. The BZS Micro Forests created are denser and richer in biodiversity compared to traditional plantings. Areas that were traditionally a monocrop of invasive species such as Brazilian Pepper (Schinus terebinthifolia) and Napier Grass (Cenchrus purpureus) have been transformed to include hundreds of native and endemic plants across 45 different species. The emphasis on planting species that evolved in Bermuda's environment that are least likely to suffer damage during hurricanes ensures the sustainability and resilience of the forests.

ii) Achievement of Original Objectives and Outcomes: The project's original objective was to plant 1500 seedlings on 10 sites each year for three years, prioritizing native and endemic species to promote biodiversity and environmental stewardship. These objectives have been exceeded. This year, the BZS Micro Forest Project The project not only met its planting targets but also emphasized the importance of native species and engaged the community in conservation efforts. Over the last year, 2367 individual plants were planted across 45 different species. Over 48,000 invasive species were removed from the designated BZS Micro Forest plots! The total area of all planted plots is 52,935.03 ft² or 4917.82 m². Additionally, the project aligns with UN principles of sustainability and biodiversity protection, indicating its success in meeting broader environmental goals.

iii) Success Indicators: The project's success indicators, such as plant survival rate, species distribution, biomass, and carbon sequestration data, as well as community participation rates, have been exceeded. The establishment of a registry to track these indicators demonstrates a commitment to accountability and ongoing evaluation of project outcomes.

iv) Long-Term Impact: The project's focus on education and awareness efforts targeted at schoolchildren ensures the sustainability of its impact. By instilling an understanding of native biodiversity and environmental conservation principles, the project aims to create a lasting legacy of environmental stewardship among future generations. In conclusion, the BZS Micro Forest Project has been highly successful in achieving its objectives, promoting biodiversity, and engaging the community in environmental conservation efforts. Its emphasis on native species, innovative planting methods, and educational initiatives makes it a model project for sustainable environmental management. Therefore, it deserves a rating of 1 on the scale provided.

Supporting Evidence - file(s) upload

[DPL00007 SupportingEvidence Images#2](#)

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[DPL00007 SupportingEvidence Maps](#)

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Supporting Evidence - links to published document/online materials

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Project Challenges

The BZS Micro Forest Project encountered significant rainfalls this year—the second-largest on record—the team had to navigate both the positive and negative impacts this posed on plant growth and weed management.

Anticipated Problems: Plant Growth: The project's primary objective is to cultivate a dense, diverse micro forest of native and endemic plants while removing the fast growing invasive species.. The team anticipated the normal maintenance of weeding and mulching to maintaining healthy plant growth in a constrained area.

Unexpected Problems: Excessive Rainfall: With unusually high levels of rainfall, the project experienced rapid plant growth, but it also triggered extensive weed proliferation. This resulted in dense undergrowth that competed with the micro forest for nutrients and sunlight.

Actions Taken to Resolve These Problems:
Enhanced Weed Management: The project team employed a more aggressive weed control strategy to manage the unexpected proliferation. This included manual weeding and applying organic mulch to suppress weed growth.

Improved Drainage Systems: To handle the excess water and prevent flooding, the team improved the drainage around the impacted plots. This prevented root rot and other water-related issues in the forest.

Reinforced Plant Support: The rapid growth of certain plants required additional support structures to ensure stability. The project team used stakes, trellises, and other methods to support plants as they grew taller due to the increased rainfall.

Monitoring and Adaptation: Continuous monitoring allowed the team to track plant health and growth. This facilitated early detection of issues and timely responses to prevent further complications.

Lessons Learned

i)
Administrative: Establishing clear roles and responsibilities streamlined project management. This clarity facilitated smoother operations and minimized confusion. **Management:** Regular team meetings and open communication fostered collaboration and ensured everyone stayed informed. An agile approach to management allowed us to quickly adapt to changes and maintain project momentum.
Technical: Using proven methods, such as the Miyawaki technique for micro forests, ensured rapid growth and a high success rate. Integrating technology for data collection and project tracking also contributed to efficiency.
Monitoring: Consistent data collection and regular monitoring provided insights into the project's progress, allowing for timely adjustments and informed decision-making.
Communications: Transparent communication with stakeholders and effective outreach through social media and community events helped build trust and engagement.

ii)
Administrative: Navigating complex approval processes caused delays in site selection and initial planting. Limited administrative resources occasionally created bottlenecks.
Technical: Inadequate soil in some areas resulted in slower plant growth, requiring additional efforts to address.
Monitoring: A lack of baseline data for certain native and endemic plants made it challenging to measure the full impact of the project using Bermudian Species. **Communications:** The BZS's Marketing Officer left in May 2023, and left a hole in the communication side of the project.

iii)
Streamline approval processes to minimize delays.
Develop more robust contingency plans for unexpected challenges.
Enhance monitoring resources to ensure comprehensive data collection.

iv)
Establish strong partnerships with local organizations & community groups.
Prioritize community engagement and volunteer involvement to foster support.
Maintain flexibility to adapt to changes quickly.

Section 3 - Project Finance (Essential)

Project Expenditure

Project Spend (indicative) since last Annual Report	2023/24 Grant (£)	2023/24 Total actual Darwin Plus Costs (£)	Variance %	Comments (please explain significant variances)
Staff Costs				
Consultancy Costs				
Overhead Costs				
Travel and Subsistence				
Operating Costs				
Capital Items				
Others				
Total	50,000.00	50,000.00	0	

Please provide a short narrative summary on project finances.

The BZS Micro Forest Project's financial management exemplifies transparency and accountability. While we did not have the full grant allowance at once, the BZS opted to claim 85% of the total grant for a total of £42,500.00. The BZS received \$52,760.73 from DEFRA on May 24, 2023. The BZS used internal Micro Forest funds to make up the difference until this final report is submitted and found satisfactory for the remaining 15% of the grant.

Throughout the project implementation, there were no deviations or differences between the planned and actual expenses, primarily due to meticulous budgeting and cost monitoring. The project adhered closely to its budgetary allocations, ensuring efficient utilization of funds.

It's worth noting that the project strictly adhered to the guidelines stipulated by the Darwin Plus Local funding, ensuring that no other purchases or costs were covered by these funds. In instances where the allotted funds were depleted, the Bermuda Zoological Society assumed responsibility for covering any remaining balance, underscoring its commitment to the project's success and sustainability. Through diligent financial management, the BZS Micro Forest Project has effectively maximized its impact in promoting biodiversity conservation and environmental stewardship within the community.

Section 4 - Contribution of Project to Darwin Plus Programme Objectives

Please select up to **one** indicator that applies within **each group/indicator list (A, B, C, D)** and report your results for that indicator in the text box underneath. If you do not have relevant results to report for any of the indicators in a particular group, you can leave them blank.

Please also submit some form of evidence (above) to demonstrate any results you list below, where possible.

Group A: Capability and Capacity - Core Darwin Plus Standard Indicators (select one)

Unchecked	DPLUS-A01: Number of people from key national and local stakeholder groups completing structured and relevant training.
Unchecked	DPLUS-A02: Number of secondments or placements completed by individuals of key local and national stakeholders.
Checked	DPLUS-A03: Number of local/national organisations with improved capability and capacity as a result of project.
Unchecked	DPLUS-A04: Number of people reporting that they are applying new capabilities (skills and knowledge) 6 (or more) months after training.
Unchecked	DPLUS-A05: Number of trainers trained reporting to have delivered further training by the end of the project.

Group A Indicator Results

13 local/national organisations with improved capability and capacity as a result of project.

Group B: Policies, Practices and Management- Core Darwin Plus Standard Indicators (select one)

Unchecked	DPLUS-B01: Number of new/improved habitat management plans available and endorsed.
Unchecked	DPLUS-B02: Number of new/improved species management plans available and endorsed.
Unchecked	DPLUS-B03: Number of new/improved community management plans available and endorsed.
Unchecked	DPLUS-B04: Number of new/improved sustainable enterprises/ community benefits management plans available and endorsed.
Checked	DPLUS-B05: Number of people with increased participation in local communities / local management organisations (i.e., participation in Governance/citizen engagement).
Unchecked	DPLUS-B06: Number of Local Stakeholders and Local Communities (people) with strengthened (recognised/clarified) tenure and/or rights.

Group B Indicator Results

635 people with increased participation in local communities and local organizations.

Group C: Evidence and Best Practices - Core Darwin Plus Standard Indicators (select one)

Unchecked	DPLUS-C01: Number of best practice guides and knowledge products published and endorsed.
Unchecked	DPLUS-C02: Number of new conservation or species stock assessments published.
Unchecked	DPLUS-C03: New assessments of habitat conservation action needs published.
Unchecked	DPLUS-C04: New assessments of community use of biodiversity resources published.
Unchecked	DPLUS-C05: Number of projects contributing data, insights, and case studies to national Multilateral Environmental Agreements (MEAs) related reporting processes and calls for evidence.

Group C Indicator Results

null

Group D: Sustainable Benefits to People, Biodiversity and Climate - Core Darwin Plus Standard Indicators (select one)

Checked	DPLUS-D01: Hectares of habitat under sustainable management practices.
Unchecked	DPLUS-D02: Number of people whose disaster/climate resilience has been improved.
Unchecked	DPLUS-D03: Number of policies with biodiversity provisions that have been enacted or amended.

Group D Indicator Results

0.298 hectares of micro forests planted and under sustainable management practices this year (32,032.48 ft² or 2975.91 m²). Total area of planted plots to date = 0.492 (52,935.03 ft² or 4917.82 m²)

Section 5 - Project Partnerships, Wider Impacts and Contributions

Project Partnerships

- The corporate sponsors of the project were not involved in any planning and decision making and in implementation. The Bermuda Park's Department was a partner who only approved of the site selection on public park land.
- The Bermuda Park's Department was the only branch of a Government organization which the BZS Micro Forest Project worked with. They only oversaw the approval of the site selection to create these micro forests.
- The Bermuda Zoological Society and the Bermuda Park's Department collaborated on creating a Micro Forest for the King's Coronation, which was unveiled May 6th, 2023.
- Not applicable.

Wider Impacts and Decision Making

The project has been instrumental in raising awareness about the importance of environmental conservation and restoration. Through community engagement activities, educational outreach, and volunteer events, it highlighted the benefits of micro forests and native plant restoration. This increased awareness influenced decision-makers in the public and private sectors to consider environmental factors more carefully in their decisions.

The project's emphasis on community engagement has inspired local communities to take an active role in environmental decision-making. This grassroots movement has led to:

Increased Local Advocacy: Community members are more vocal about environmental issues, advocating for sustainable practices and policies at local meetings and public forums.
Neighborhood Initiatives: Inspired by the project's success, some neighborhoods have started their own environmental projects, focusing on local sustainability and biodiversity.

The project's educational outreach has influenced local schools and educational institutions to include environmental topics in their curricula. This change has helped embed environmental awareness in the next generation of decision-makers. Teachers and school administrators have recognized the importance of teaching sustainability and have integrated project-based learning into their programs.

By demonstrating the practical benefits of environmental restoration and sustainability, the project has created a ripple effect that has influenced decision-making across multiple levels. It has encouraged local government, private sector partners, and the community to prioritize environmental issues in their decision-making processes. This shift toward environmental consciousness is expected to have long-lasting positive impacts on the local ecosystem and community well-being.

Sustainability and Legacy

Despite the end of the Darwin Plus Local funding, the project has created a lasting legacy with continuing benefits, and will keep running for another 6 years. These benefits include:

Community Engagement and Ownership: The project fostered a strong sense of community engagement, leading to a network of volunteers and supporters committed to maintaining the micro forests and other project initiatives.
Environmental Restoration and Biodiversity: The micro forests established during the project will continue to grow and contribute to biodiversity. These green spaces offer habitats for native flora and fauna, supporting local ecosystems and providing ongoing environmental benefits.
Educational Impact: The BZS's focus on education and outreach has instilled a greater environmental awareness within the community. Schools and educational institutions that integrated the project into their curricula are likely to continue teaching sustainability concepts, ensuring a lasting legacy of environmental education.
Influence on Policy and Corporate Responsibility: The project's influence on public policy and corporate responsibility is expected to endure. Local governments and businesses that embraced more sustainable practices due to the project are likely to continue integrating environmental considerations into their decision-making.

Section 6 - Communications & Publicity

Exceptional Outcomes and Achievements

Best of Bermuda Award 2023

<https://www.thebermudian.com/awards/best-of-bermuda-awards/2023-best-of-bermuda-awards-people-places/>





Paid homage to the King's Coronation by collaborating with the Bermuda Government's Parks Department on creating a Micro Forest. This Micro Forest is in the Botanical Gardens, and was officially opened on the King's Coronation on May 6th, 2023.
<https://www.royalgazette.com/environment/news/article/20230509/garden-is-a-crowning-glory-for-the-botanical-gardens/>


Nominated in 2022 and 2023 for a DroneDeploy Steward of Sustainability, runner up in both years.





https://www.linkedin.com/posts/dronedeploy_2023-dronedeploy-awards-finalists-activity-7109666317594480640-W41r

Photo, video or graphic to be used for publicity and communications.

Please upload at least one relevant and engaging image, video or graphic that you consent to be used alongside the above text in Defra, JNCC or NIRAS communications material.

 [KingsCoronationGarden_1_DPL00007](#)
 30/04/2024
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 jpg 10.25 MB

 [KingsCoronationGarden_3_DPL00007](#)
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 [KingsCoronationGarden_2_DPL00007](#)
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Photo, video, and/or graphic captions and credits.

KingsCoronationGarden_1_DPL00007 - Corporate sponsors RenaissanceRe helping to plant up the King's Coronation Garden on April 20th, 2023. - Bermuda - photo credit: Peter Backeberg
KingsCoronationGarden_2_DPL00007 - Corporate sponsors RenaissanceRe helping to plant up the King's Coronation Garden on April 20th, 2023. - Bermuda - photo credit: Peter Backeberg
KingsCoronationGarden_3_DPL00007 - Corporate sponsors RenaissanceRe helping to plant up the King's Coronation Garden on April 20th, 2023. - Bermuda - photo credit: Peter Backeberg

I agree for the Biodiversity Challenge Funds Secretariat, Administrator, and/or JNCC to publish the content of this section.

Yes, I agree for the BCFs Secretariat and/or JNCC to publish the content of this section.

Please list any accounts that you would like tagged in online posts here. This can include project pages, partners' pages or individuals' accounts for any of the following platforms: LinkedIn, Facebook, Twitter, or Instagram.



<https://bm.linkedin.com/company/bermuda-zoological-society>
<https://www.facebook.com/bermudaaquariummuseumandzoo/>
https://www.instagram.com/bda_zoo_society/?hl=en-gb
<https://www.youtube.com/BermudaZooSoc>

Section 7 - Darwin Plus Contacts

Please tick here to confirm that you have read and acknowledge the BCF's Privacy Notice on how contact details will be used and stored and that you have sought agreement from anyone that you are sharing personal details with us on their behalf.

I confirm I have read the Privacy Notice and have consent to share the following contact details

Project Contact Details

Project Contact Name	Nicholas Coelho
Role within Darwin Plus Project	Micro Forest Project Officer
Email	
Phone	
Do you need further sections to provide additional contact details?	<input type="radio"/> No