



Darwin Plus: **Overseas Territories Environment and Climate Fund** **Annual Report**

To be completed with reference to the "Project Reporting Information Note"
 (<https://dplus.darwininitiative.org.uk/resources/information-notes/>).

It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2022

Darwin Plus Project Information

Project reference	DPLUS105
Project title	Building capacity to make Montserrat a mountain chicken refuge
Territory(ies)	Montserrat
Lead partner	Durrell Wildlife Conservation Trust
Project partner(s)	Montserrat Department of Environment (DoE), Montserrat National Trust (MNT), Montserrat Ministry of Education, Youth Affairs and Sports (MoEYAS), WildDominique, ZSL, NordensArk, Chester Zoo & Bristol Zoo
Darwin Plus grant value	£265,923.00
Start/end dates of project	01/07/2020 – 31/03/2023
Reporting period (e.g. Apr 2021-Mar 2022) and number (e.g. Annual Report 1, 2)	April 2021 – Mar 2022 Annual Report 2
Project Leader name	Mike Hudson
Project website/blog/social media	Mountainchicken.org Twitter.com/rewildcaribbean Facebook.com/ReWildCaribbean/
Report author(s) and date	Mike Hudson & Luke Brannon, reviewed by Ernestine Corbett, Stephen Mendes and Delmaude Ryan, 30/04/2022

1. Project summary

This project aims to re-establish a semi-wild, breeding population of mountain chickens on Montserrat and enable long-term protection of the species, this project combines ground-breaking habitat manipulation initiatives with in-country conservation capacity building and public/schools engagement activities. Knowledge of the efficacy of habitat manipulation in mitigating chytridiomycosis will be improved and disseminated to conservation practitioners globally. In the absence of native land mammals, the mountain chicken is the top terrestrial predator in Montserrat and its presence is vital to ecosystem functioning and crop-pest control. *Batrachochytrium dendrobatidis* (Bd) arrived in Dominica in 2002 and Montserrat in 2009, decimating both islands' mountain chicken populations. Bd persists in reservoir amphibian species on both islands rendering eradication impossible. Mechanisms are therefore required to enable the reintroduction of mountain chickens in the presence of Bd. The Mountain Chicken Recovery Programme (MCRP) aims to recover a species from the brink of extinction and, in doing so, act as a globally important case study in the fight against a disease threatening amphibian survival globally. Once a familiar sound – a generation have grown up without hearing a mountain chicken calling. Local connection to, and sense of responsibility for the mountain chicken has decreased as a result. Public / schools outreach and capacity-building components

will contribute to the Government of Montserrat's 2020-2030 Youth Development Policy – focusing on employment and social development through provision of teaching/careers advice in priority areas including biology, veterinary medicine and environmental science. The project will also support a forthcoming national curriculum review (between 2020-2023), focusing on incorporating local environmental issues under four key areas: environment, sustainability, climate change and cultural identity. This project will enhance environmental and scientific understanding among all students, not only encouraging uptake of these subjects at the tertiary education level but also embedding sensitivity towards, and knowledge of, the local environment at all levels within the future workforce.

2. Project stakeholders/partners

The project is a formal partnership with three on-island partners, as well as several international Zoos. The on-island partners work in an integrated fashion so that all work is delivered by Durrell, Department of Environment (DoE) and Montserrat National Trust (MNT) staff at all times, with outreach also in collaboration with the Ministry of Education, Youth Affairs and Sports. It can be assumed, therefore, that any progress in this report is the result of the collaborative efforts of all partners. Durrell's relationship with DoE is longstanding, and so this partnership has been borne out of collaborative working and understanding of each other's goals. MNT are a more recent joiner to the partnership but have objectives which are very closely aligned with that of Durrell and DoE, and so the partnership is of mutual benefit. All partners were involved in the project planning.

The Montserrat National Trust has recruited two interns on a full-time basis. Both interns have since been seconded to MCRP thanks to alterations in Darwin funding allowing Miss Allison and Mr Sinclair, two to three days per week (See Annexes 3-14). During these days both interns are training and working alongside the team. This will give both a well-rounded skillset and it is hoped that upon completion of the grant both A. Allison and A. Sinclair will be retained within MNT.

Working closely with both DoE and MNT in the maintenance and management of both the live food breeding facility and the mountain chicken safe-haven, partnerships continue to be excellent. Through COVID curfews in Montserrat during January/February of 2021, both project officers Mr Weekes and Miss Ryan worked flawlessly to ensure project feed schedules were maintained and husbandry upheld. Both DoE and MNT have aided in facilitating the passage of the MCRP during these curfews to which we were highly grateful. The public engagement we have been able to conduct this year has boosted the profile of the project, making requests for exemptions during such periods being recognised.

Alongside the formal partnerships, informal relationships with local technical specialists, such as Calvin "Blacka" Fenton, have ensured that vital species centric work could be carried out. Durrell had previously nominated Mr. Fenton for Disney's Conservation Hero Award, which he successfully won, a significant award recognising his efforts helping the MCRP, amongst other conservation initiatives on island, with a congratulatory ceremony being held at MNT in joint with DoE.

3. Project progress

3.1 Progress in carrying out project Activities

Output 1: Enhanced capacity exists within Montserrat DoE to implement effective conservation actions through newly recruited and highly trained Project Officers.

With one of our project officers leaving in July 2021, we successfully employed two mountain chicken project interns in place. This process was carried out collaboratively with MNT and resulted in the employment of Miss Allison and Mr Sinclair.

Mr Weekes has now gone through the training planning process, identifying skills on the Durrell / IUCN Conservation Practitioner Competency Register which he aims to develop within the coming year (Annex 15). Both Miss Allison and Mr Sinclair being part-time officers, their elements of training are more streamlined, covering all aspects of the programme from husbandry through to outreach engagement.

To date, Miss Ryan and Mr Weekes have been trained in mountain chicken project relevant skills by the Project Coordinator, including handling and health checking the mountain chickens, feeds, skin swabbing to test for the fungal agent Bd, post-mortem procedures, insect husbandry and reservoir species surveys (see training section of monthly reports in Annexes 3-14 and evidence / photos of training in Annex 16). They have also complete formal first aid training in Anaphylaxis Awareness level 2 and Concussion and Brain Injury Awareness level 2 (Annex 16). Miss Ryan enrolled and completed a Nature Connectedness with the University of Derby (Annex 16). The training needs and assessment previously set for end of Q4 Y2 had to be delayed by one month due to unforeseen covid sickness. This is all booked to be undertaken in person in Q1 Y3, with Dr Timothy Wright, Durrell's Conservation Training Manager, working with DoE and MCRP staff alike. Miss Ryan is currently attending the three-month Durrell Endangered Species Management course (DESMAN) in Jersey, where she'll achieve a postgraduate certificate, significantly increasing her skillset (Annex 17). We intend for Mr Weekes to attend this course during Y3.

An exchange trip took place between Montserrat and Dominica, with Coordinator Luke Brannon and Project Officer Miss Ryan visiting Dominica, shadowing and taking part in an array of conservation activities with NGO Wild Dominique and Dominica's Forestry, Wildlife and Parks Division (Annex 18). The building and strengthening of interisland relationships is most valuable, with plans for Dominica to visit Montserrat in Q1 Y3. We began virtual monthly meetings in April 2021 and have carried these out throughout Y2, familiarising each team with the others projects, exchanging knowledge and building collaboration (Annex 18).

In cross collaboration with Darwin Initiative, Exeter University and Exeter Marine Conservation, project officers Mr Weekes and Miss Ryan undertook training on the Turtle Project, 1-2 days per week through September/October (Photos in Annex 16). Officer Weekes also aided the Darwin initiative Securing Montserrat's threatened endemic species and natural capital through community-actions, in the identification of flora species.

DoE trained all Project Officers in the annual surveying of birds. Capture, identification, data collection, ringing and release were taught. DoE also trained all project officers in bat surveying. In cross collaboration project coordinator alongside DoE took part in an iguana capture, handle and pit tag training session in the field (Photos in Annex 16).

Project officers continue to develop and build confidence in their skillsets across all areas of the programme, both have lead outreach initiatives, given presentations to students, trained interns and have featured on the local radio.

Output 2: Mountain chicken population established and surviving in a semi-wild managed environment with signs of breeding and carrying capacity of enclosures is increased to 50.

The population of mountain chickens in Montserrat is doing well, with 22 animals of the 27 introduced in 2019 surviving at the time of writing. There were plentiful breeding attempts since the project start, with 75 nests recorded, five of which were confirmed fertile with active tadpoles – these were the first mountain chicken nests known in Montserrat since the 2009 near-extinction of the species, a real success (see Annexes 3-14). One of these nests was successful, with 42 froglets seen (Annex 19). Unfortunately, none appear to have survived to adulthood within the enclosure, though they may have left whilst small enough to escape. This was achieved much earlier than expected. They may have been predated by both ground lizards (now removed), and green-backed herons which visited regularly during the period the metamorphs were present and are known to predate small animals (Annex 20). The unsuccessful nests are common among young adult frogs, fertility should increase through Y3.

We have carried out monthly health checks of the animals in the enclosure including skin swabs for Bd and morphometric measurements to determine condition. Over Y2 all 22 animals reached new weight maximums, 18 of which were in the last three months – an indication they are healthy and feeding well. We continue to feed the mountain chickens three times a week with visual health checks and presence confirmed, and we change the pond water once per week (Annexes 3-14). We have also collected all environmental and monitoring data at least once per month. The PIT Tag monitor that was damaged during flooding in Y1 is now fixed and back within the enclosure.

Finally, the project veterinarians and keepers from the European Zoos have been sent the data and photos from the monthly health checks and continue to advise on the welfare of the animals / interventions required which since the start of the Darwin project have been minimal.

Output 3: 5-year conservation management plan for mountain chickens in Montserrat is created based on the results of the trials in the semi-wild enclosure.

No activities scheduled in Y2.

Output 4: Increased public engagement with nature in Montserrat using the mountain chicken as an ambassador through outreach events and schools engagement.

Outreach materials arrived on island including our project pop up tent, branded tablecloths, flags, banners (e.g. in Annex 21). These have been used for various events including National Trust events and Easter celebrations with banners carried to outreach sessions across schools.

Our designed nature connectedness signage in collaboration with Durrell's learning team and experts in Nature Connectedness, and Montserrat-based partners, have begun to be deployed (images on trail and additional proofs attached as evidence in Annex 22). An additional eight signs were created and print. Previously the Montserrat Tourism Department revealed an alignment of our goals around signage and the promise to expand the signage deployment across all tourism trails in Montserrat – far greater than our original plan for four trails. Since this we designed and ordered an additional 18 signs across three further trails. We have also created a series of mountain chickens cast from concrete and painted by our team and local artists/students, which have been placed along these trails as an extra activity for children and other interested users to search for, and post on social media to encourage others to do the same (Annex 23).

During Y1 baseline nature connectedness surveys were conducted amongst local hiking trail users, there were designed to highlight the four most utilised trails for our signage campaign and included the Nature Connection Index. As a result, we have feedback from ~1% of the population and baseline nature connection levels for these individuals prior to the roll out of the new nature connection signage (See Annex 3-14 for monthly report containing this activity). We plan to conduct a follow up survey of the trails to receive results on changes in NC and trail engagement after new signage and activities have been deployed.

Baseline nature connectedness surveys have been conducted throughout all primary schools on island, using Nature Connection Index (Richardson et al. 2019) as laid out in our proposal. This is significant and is the first of its kind here in Montserrat (Annex 24 for questionnaire).

Outreach sessions have been carried out through all primary schools and to part of the secondary school. Students taught over Y2 total 365, not including summer schools or extracurricular activities and students also visited our insect facility (Annex 25). We also conducted media interviews with Lunch & Learn, a local media initiative (Annex 25 photo and video), alongside opportunistic engagement with events and clubs.

COVID curfews in January 2022 saw schools delayed in returning through to February 2022 and the resulting pressures for children and teachers to both “catch up” on missed work for assessments and emergency protocols in schools prevented outreach in the new year being restricted until March of 2022. Following this we have been able to engage fully with primary schools, though the secondary school and college continue to catch up with teaching and will be a focus of Y3.

Project staff have been interviewed by ZJB radio three times this year (see monthly reports – Annexes 3-14 and photo in Annex 25). Average audience of these interviews is thought to be 5000 for a peak show, with an additional 2000-5000 when including website replays accessed by diaspora and non-residents on Montserrat Echo. In addition, project staff have featured on 664 connect – a leading local website, with a large viewership of especially younger people in Montserrat, one of our key targets for outreach activities (See Annexes 3-14).

We held handover ceremony with the art students at Montserrat Secondary School who assisted with the painting stone MC statues. Gift of appreciation given to class and MCRP to organise for the class to hike the MC trail where the frogs have been placed (Annex 23).

Project staff have posted very regular social media content including photos, blogs and competitions. This year we more than tripled our average unique monthly engagements from 808 to 2,812 and our average monthly reach hit 16,727 with our followers increasing from 1460 to 1855 across our three media channels. This remains a useful indicator (Annexes 3-14).

MCRP with the help of DoE, led Mountain Chicken Day hike on the Soldier Ghaut historical transect, which is not a part of the publicly open trails, where participants took part in a treasure hunt to find painted Mountain Chicken statues with audio calls being played as they approached each frog. Participants took part with an environmental gift raffle also drawn. Details of the hike were featured on ZJB/MALHE Vibes (Annex 25).

Coordinator Luke Brannon gave online lectures to Nottingham Trent University students via the Durrell Conservation Academy over the previous year alongside online lectures to ESR and DESMAN students at the Durrell Conservation Academy. He has also taken part in the National Trusts reinvigorated 'Monty's Messengers' children's club and will look to support sessions of this club in Y3 where possible (See Annexes 3-14).

Two one-month internships were complete by one 5th form student and one college student. These internships are supported by the Ministry of Education who offer a remuneration to the student's, with our team training them in all aspects of the Mountain Chicken Programme. This will again be undertaken in Y3 (Annex 26).

An introductory talk on the MCRP and its history was given to Bards college students. Bards College at Simons Rock is situated in Massachusetts, with students from the college completing a semester abroad in Montserrat, undertaking environmental studies. MCRP is accommodating two students one day per week plus also incorporating the larger group for amphibian surveys (Annexes 3-14).

3.2 Progress towards project Outputs

Indicator numbers in brackets refer to logframe.

Output 1: Enhanced capacity exists within Montserrat DoE to implement effective conservation actions through newly recruited and highly trained Project Officers.

At the start of the project, DoE had spoken to us about succession planning, and training a new generation of forestry officers to fill the gaps left by their retiring staff, who are extremely skilled and difficult to replace. Two full time Project Officer(s) and two part-time Project Intern(s) (1.2) have received training across a whole variety of conservation disciplines, Durrell's Endangered Species Recovery course and enrolment on Durrell's Endangered Species Management and continue to gain skills which make them more effective conservationists (Annexes 3-14, 16 & 17). We are on track to deliver well trained staff for employment by project partners at project end basing their training needs on the Conservation Practitioner Competency Register developed by Durrell / IUCN (Annex 15) (1.3). Our training needs assessment for DoE, initially planned for Y1 but delayed facilitating face to face delivery in Y2 was further delayed due to staff covid sickness and thus is booked and due to be complete first week of May 2022 (1.1).

The Project Officers have received training in skills listed in Section 3.1. (1.4) (See Annexes 3-14). During Y2 DoE has included and trained staff in forestry skills (Annex 16) (1.5). There have been monthly virtual inter-island exchange meetings and an in-person inter-island exchange took place between Montserrat and Dominica, with two members of staff travelling to Dominica, working alongside WildDominique and Dominica's Forestry Division (1.6) (Annex 18).

Output 2: Mountain chicken population established and surviving in a semi-wild managed environment with signs of breeding and carrying capacity of enclosures is increased to 50.

27 mountain chickens populated our enclosure at the start of our project, of which 22 are still alive (two mortalities occurred during Y2) (2.4). This compares to a baseline state of no known wild animals since 2016. The two mortalities during Y2 were not due to chytridiomycosis, a key indicator of success for this output (post-mortem reports available upon request).

There had been no recorded breeding of the species on the island since the near-extinction event in 2009. Since project start, there have been 75 nests recorded (see Annexes 3-14 – Indicator 2.4), five of which were confirmed fertile with active tadpoles – these were the first mountain chicken nests known in Montserrat since the 2009 near-extinction of the species, a real success (see Annex 19).

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At the start of the project, we had no data on the likely impact of environmental manipulation on the mitigation of the fungal disease chytridiomycosis in a field setting. Since the start of the Darwin project, we have collected 21 months of continuous monthly skin swab (infection status) data (510 swabs – Indicator 2.2 - see Annexes 3-14), with movement, health, and environmental data alongside it (2.1). Whilst not yet sufficient to determine whether the intervention has been successful, these data are a strong foundation on which to make this assessment.

Veterinary and husbandry advisors to the project have reviewed data throughout the project and are happy with the progress, including all animals reaching new maximum body conditions over the past 12 months (2.3. see Annexes 3-14).

Should we collect sufficient positive data on the impact of the enclosure on the survival of animals in the face of chytridiomycosis, a second enclosure build, and second cohort of mountain chickens released within (2.5, 2.6), though the lack of natural infection in Y2 has meant limited progress was made towards filling this knowledge gap this year. When these data are collected, they will be disseminated through a peer reviewed paper and presented at a conservation conference (2.7, 2.8).

Output 3: 5-year conservation management plan for mountain chickens in Montserrat is created based on the results of the trials in the semi-wild enclosure.

At the start of the project, there was no practical plan for the immediate conservation activities required to restore the mountain chicken across its range in Montserrat. This project delivers on this key objective, which is part of the longer-term Species Action Plan of which all project partners (except MNT – a new partners) are signatories.

Progress has been made through the collection of data on the efficacy of the enclosure and interventions that will be the basis for this management plan. In addition, the training and capacity building we are delivering is ensuring that our partners are strong enough to deliver long-term conservation action for Montserrat's endemic species.

No specific progress was expected against any of the indicators for this output in Y2, as they are planned for Y3.

Output 4: Increased public engagement with nature in Montserrat using the mountain chicken as an ambassador through outreach events and schools engagement.

At the start of the project, there was relatively limited knowledge of the mountain chicken in Montserrat's school children who had grown up with this species missing from the night-time soundscape. Older generations remember the species, which was hunted as a food source which drew food tourists from around the world. We did not have a baseline for nature connectedness levels of Montserrat and have started to collect baseline survey data to understand this (e.g. in Annex 24). This is made interesting by the main measures of nature connectedness e.g. the Nature Connection Index, being relatively European-centric and having not being trialled in other cultures. We are pioneering this research in both Montserrat and other Durrell sites.

Delivery of planned outreach activities as lay out in agreement with local partners in Y1 which was initially restricted during Y1 due to COVID, began to be deployed and targets hit during Y2 (4.1). School activities have been carried out across Y2 with outreach sessions through schools reaching 365 students, reaching 52% of students on island so far (Annexes 3-14 & 25) (4.2).

COVID curfews in January 2022 saw schools delayed in returning through to February 2022 and the resulting pressures for children and teachers to both "catch up" on missed work for assessments and emergency protocols in schools prevented outreach in the new year being restricted until March of 2022.

We successfully facilitated a month-long internship for two students, within the mountain chicken project in collaboration with MoEYAS during Y2 (Annex 26), one 5th form student and one college student (4.3). MoEYAS will continue to support this through Y3.

The Mountain Chicken Day hike was delivered in collaboration with DoE was held on the Soldier ghaat historical transect, which is not a part of the publicly open trails. Participants took part in a treasure hunt to find painted mountain chicken statues with audio calls being played as they approached each frog. Participants took part with an environmental gift raffle also drawn. This was complete and broadcast via our social media channels. Details of the hike were featured on ZJB/MALHE Vibes. Approximately 0.5% of the population of Montserrat (Annex 8 & 25). The hike was delayed for two weeks due to detrimental weather conditions which likely impacted turnout. Three project staff featured on the morning ZJB radio show on Mountain Chicken Day, engaging the island on the history and importance of the species and local song about the mountain chicken played (4.4). During this peak radio show audience numbers can hit 5000, assuming half of this, 2500 individuals listening, meaning 50% of the population will have been reached.

Project staff have been interviewed by ZJB radio three times this year (4.5) (Annexes 3-14). Average audience of these interviews is thought to be 5000 for a peak show, with an additional 2000-5000 when including website replays accessed by diaspora and non-residents on Montserrat Echo. In addition, project staff have featured on 664 connect – a leading local website, with a large viewership of especially younger people in Montserrat, one of our key targets for outreach activities.

Project staff have posted regular social media content including photos, videos, blogs and competitions. This year we more than tripled our average unique monthly engagements from 808 to 2,812 and our average monthly reach hit 16,727 with our followers increasing from 1460 to 1855 across our three media channels (4.6). (Annexes 3-14).

Our nature connectedness signage has been deployed across four trails (4.7 - images on trail and additional proofs attached as evidence in Annex 22). An additional eight signs were created and printed. 18 additional signs have been designed by the team for three further trails and funded by the Tourism department. Due to unforeseen difficulties Tourism has had to postpone the purchase of these but are hopeful this will be complete, and the remainder of the signage rolled out by end of May 2022. Mountain chickens cast from concrete and painted by our team and local artists/students have been placed along one of these trails to accompany these (Annex 23).

We have engaged with the Ministry of Education, Youth and Social Affairs who are currently in the process of finalising a draft Sustainable Education curriculum (available on request as unpublished). MCRP will be providing feedback and will contribute to both their sustainable environment curriculum and quality assurance process (4.8). This remains a useful indicator and will be made more specific as we attend and contribute, gaining a greater understanding of this process.

3.3 Progress towards the project Outcome

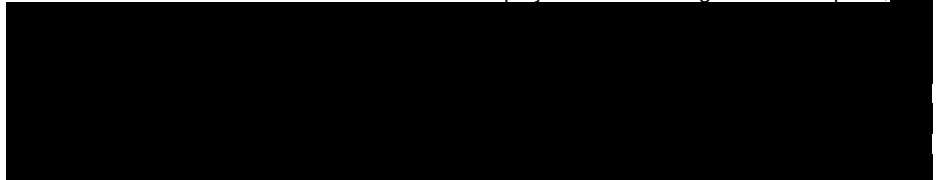
Project Outcome: Montserratian conservation capacity is developed enabling the delivery of a 5-year conservation plan for mountain chickens using intensive management strategies and supported by an increased local connectedness with the species.

Progress: Indicator 0.1 - Two Officers appointed and trained in key project specific skills including handling and health checking the mountain chickens, feeds, skin swabbing to test for the fungal agent Bd, insect husbandry and reservoir species surveys (See Annexes 3-14). Both officers have complete Durrell's Endangered Species Recovery course, with one officer currently undertaking Durrell's intensive Endangered Species Management course and the remaining officer set to complete it during Y3. Nature connection course alongside first aid training, and inter-Darwin project training has also been undertaken by project officers. We have established training programmes for both based on the Durrell / IUCN Conservation Practitioner Competency Framework (Annex 15), to ensure this training fulfils all requirements for an effective species conservation practitioner. These staff will then be of the required experience level to be employed in our in-country partners and replace existing staff as they require, filling the current experience gap.

Indicator 0.2 - In the enclosure, chytridiomycosis mitigation strategies have been implemented successfully to date (Annexes 3-14), with two mortalities of mountain chicken during Y2, though these animals did not test positive for Bd post-mortem and so are not believed to have died from chytridiomycosis. We continue to collect data on the impact of these interventions to inform the potential for environmental manipulation to enable the survival of mountain chickens in the face of endemic chytridiomycosis.

This will feed into the decision-making process required for the planned five-year action plan for the species to be delivered in Y3 (Indicator 0.4).

Indicator 0.3 - There have been 75 nests since the project start including five with tadpoles



wonderful achievement (Annexes 3-14). We are now focussed on improving the chances of tadpole survival and metamorphosis in Y3.

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Indicator 0.5 – To determine whether our project is successful in increasing connectedness of the public with the mountain chicken and nature, Y1 saw baseline surveys of hikers using trails conducted, prior to deploying our nature connectedness signage on the main trails. Further surveys will be complete during Y3 to determine if a change in connectedness because of the signage has occurred. Concrete mountain chickens painted by the team, local students and artists have been placed on trail as an additional connection activity (Annex 23). Baseline nature connection surveys were carried out within all three primary schools on island during Y2 prior to outreach classes, allowing us to use the nature connectedness index to determine pre- and post-outreach effectiveness (Annex 24 & 3-14).

In summary the project has made good progress on almost all fronts in 2021, with any elements not completed being mainly due to covid restrictions which will be delivered in early 2022 to ensure the project delivers on the stated outcome.

3.4 Monitoring of assumptions

All assumptions in the original logframe remain valid except for the following list which concern activities already completed:

Assumption: 0.1.a Suitable candidates are available on Montserrat and are retained until the project end.

A third, part-time project officer employed in partnership with MNT had to be released during Y2 from both positions. Funding for this position was attributed to the positions of two part-time internships, again, in partnership with MNT, as agreed with Darwin.

We need to add an assumption (2.1c), that natural infection will occur in the population allowing us to understand the effectiveness of our conservation interventions at mitigating this infection. In Y2, no natural infection occurred in the reservoir species or mountain chickens for the first time since 2009, so we believe this happening twice in two years to be unlikely. The lack of infection in Y2 is thought to be a result of unusually warm conditions during the cooler dry season which would have been less suitable for the reproduction of the fungus.

We also need to add an assumption that teachers having capacity to facilitate our outreach in secondary schools and college as they continue to catch-up post COVID restrictions.

Through Y2 COVID continued to be a concern, we have achieved the majority of our objectives, but some elements of the project will either not be exactly as planned if COVID continues to

cause restrictions (e.g. virtual island exchanges vs. physical), or will not happen at the expected rate (i.e. number of educational facilities/outreach activities carried out due to curfews/lockdowns). As restrictions begin to loosen globally, we hope that during the final year we are able to sufficiently deliver the project as planned, but any changes will not markedly impact on the delivery of our planned outcome.

4. Project support to environmental and/or climate outcomes in the UKOTs

With respect to UKOT government priorities our project has contributed to:

- # 7 of the UK/Montserrat Charter – (UK commitment) - Use the UK, regional and local expertise to give advice and improve knowledge of technical and scientific issues. This includes regular consultation with interested non-governmental organisations and networks.
- #2 (Montserrat commitment) – Ensure the protection and restoration of key habitats, species and landscape features through legislation and appropriate management structures and mechanisms, including a protected areas policy, and attempt the control and eradication of invasive species.

Ministry of Health, Education, Youth Affairs and Sport (MoHEYAS) have outlined the following criteria: wildlife conservation, climate change, sustainability and culture in their youth development policy and curriculum review. Currently in the process of finalizing a draft Sustainable Education curriculum, MCRP will be providing feedback and will contribute to both their sustainable environment curriculum and quality assurance process.

This project strives to support and achieve three core long-term outcomes that will facilitate the recovery and preservation of Montserrat's unique natural environment, heritage and associated cultural identity.

These are:

- The reintroduction and survival of a population of recently extinct in the wild, culturally significant, charismatic apex predators - *Leptodactylus fallax*, that can be utilised to develop successful conservation initiatives for the species in-situ, and in time support the re-colonisation of the species across its historic range. The Montserrat government are signatories to the Mountain Chicken Species Action Plan towards which this project is a major contributor with the aim of restoring the species across its historical range.
- The development of novel conservation initiatives, and thus also local capacity, to counteract the impact of deadly amphibian chytrid fungus on species and ecological symptoms.
- The development and institutionalisation of cross-organisational environmental engagement initiatives and training/development strategies for youth. Focused on raising and establishing national knowledge of local natural ecosystems, heritage and conservation initiatives and exposure of youth to environmental career/training opportunities from such initiatives and hopefully also increase opportunities for succession of youth into environmental careers on island.

In reference to bullet point one and two, above, the project has so far successfully maintained a semi-wild population of mountain chickens in Montserrat despite the presence of the chytrid fungus in reservoir species and an outbreak in the facility. This marks what we believe to be a world first for an in-situ, semi-wild population, previously driven to extinction by the impacts of chytrid fungus. The modified treatment techniques utilised across this period and proven efficacy, now mean that we can potentially ensure the survival of a population in Montserrat for the future as we work towards developing other long-term strategies of resilience development. The population have now survived one full disease season since initial reintroduction, this marks a first for reintroduction attempts of the species.



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In addition, the project has also recruited four local staff of different age demographics (teens, 20s,30s) all of whom are currently receiving training in all aspects of the project, from the implementation of the novel conservation methods, through to husbandry management, needs assessment, fundraising/grant management, stakeholder collaboration and importantly outreach and engagement initiatives to both the local community and targeted youth groups. Local capacity especially within the youth is being built, lending itself to project longevity.

In reference to bullet point three, our previously unified development of a 2.5-year environmental engagement outreach strategy that targets the establishment of long-term institutionalised initiatives through the established partners, such as; the inclusion of natural heritage and ecosystems in holistic aspects of the schooling curriculum, celebration of unique environmental heritage through social events (festival, beach cleans, community hikes), and the creation of internship training opportunities & mentoring for youth interested in progressing into the environmental sector have begun rolling out. It is hoped that this will not only establish a minimum knowledge level of unique natural heritage and important conservation issues throughout the community, but also “facilitate the development of a generation of wildlife conservation minded professionals on island”. This increased collaboration, engagement and provision of training opportunities through MCRP, MNT, DoE and MoHEYAS we hope will improve succession routes for local youth into environmental careers and continue to be implemented beyond the scope of the grant.

An overall increase in appreciation of the species and the habitat requirements in the public on island is seen. Aligned with the Montserrat ‘Build a Home for Wildlife’ initiative, run by the UK Overseas Territories Conservation Forum, this encourages landowners to leave areas of their property in their natural state, or co-managed with the Department of Environment and Montserrat National Trust to encourage and promote biodiversity conservation. One of the members of this initiative has volunteered their land to be used for the enclosure for this project and for any future expansions that may be necessary.

5. OPTIONAL: Consideration of gender equality issues

All project engagement activities are equal opportunity to all island residents, and school outreach sessions are designed to ensure they engage all genders / ages / religions and disability statuses equally.

When selecting our one-month internships in association with MoHEYAS, no disabled applicants applied, and no question was asked about the religion of the applicants. Equal gender opportunity was given, with final selected applicants being 50/50 male/female.

Again, upon the departure of our third project officer, equal opportunities were given to our part-time long-term internships in collaboration with MNT, with one male and one female selected (Annex 26). Our two local partners MNT and DoE are run by two influential women, we hoped that candidates saw that the opportunity was open to all, despite environment roles traditionally being the reserve of males in much of the Caribbean.

6. Monitoring and evaluation

Throughout the first two years of this project, the Project Lead has held fortnightly meetings with the in-country Project Coordinator to ensure project activities are on schedule, and outputs being delivered. In addition, every quarter, progress against each of the ‘Measures of Success’ within the project logframe have been reviewed to ensure they are either being achieved or are expected to be achieved on schedule. The Project Coordinator also hold in-person weekly meetings with each of our partners to discuss both logistics and progress towards each of the three priority outputs in our logframe (the 5-year management plan does not require direct activities until the final year of the project). These are progress in data collection within the enclosure (Output 2), progress in training the Project Officers – and any training activities the staff will be attending that week (Output 1), and any planned outreach activities (Output 4).

For Output 1, enhancing capacity of Montserrat DoE to deliver effective biodiversity conservation, our indicators relate to the hiring and training of Project Officers who will be suitable to replace retiring staff in DoE at the end of the project. Beyond the indicators around hiring the staff, the

indicators focus on training. Both Project Officers have now completed reviews against the Durrell / IUCN Conservation Practitioner Competency Framework (Annex 15) which list all competencies required to be an effective conservationist at each level of seniority. The progress in training (both specialist skills relating to this project, and skills against the broader competency framework) has to date been recorded within monthly reports (Annexes 3-14). This section is completed by the Project Officers each month and ensures they are aware of remaining requirements. The training needs assessment now taking place at the time of writing of this report, will help to identify broader training requirements within the Department of Environment which will inform a longer-term training plan for its staff. This investment in the training of younger staff is in-line with a focus from DoE on succession planning for their workforce with many individuals close to retirement. As such, this output is contributing to the project outcome through the building of capacity.

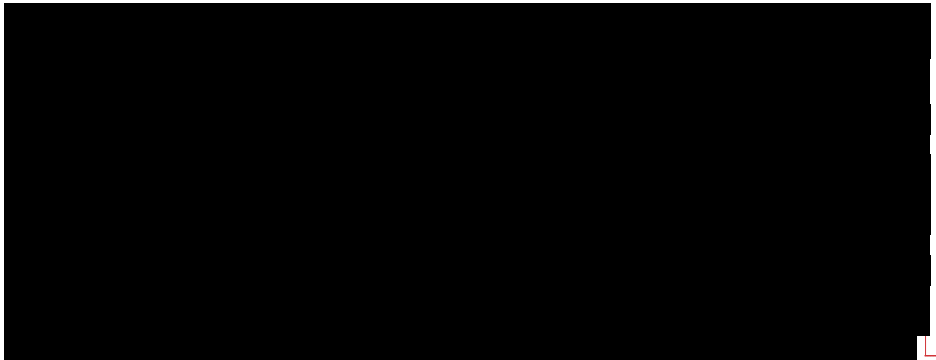
With reference to Output 2, within the enclosure, weekly feed data and monthly health check data are reported to our European Zoo partners for feedback on condition of individuals and any interventions required. Data from these reports are collected in Durrell's Sharepoint, with regular checks by the Project Lead to ensure they are being collected consistently and are up to date. A local landowner collects rainfall data from the site, in the absence of a government run weather station in the area. These additional environment data will be essential for understanding the timing of outbreaks of chytridiomycosis and its impact. Monthly skin swabs are sent to the Institute of Zoology, processed, and reported in a shared database to ensure rapid diagnostic turnaround. We know that these data will be essential in understanding the disease dynamics within the enclosure and the impact of our interventions. These were planned based on four previous releases of mountain chickens (funded by the Darwin Initiative) and studies of wild animals. All measures of success for this output relate to the survival and health of the mountain chickens (as dictated by our veterinarians), and to the data required to assess the quality of the intervention. As such, we are sure they contribute to the project outcome through increasing the likelihood of restoring the species to Montserrat. Whilst this year has not generated data towards the impacts of our interventions on the ability of the species to survive in the face of the disease, the data collection systems are setup well to receive those data when natural infection occurs.

Progress towards Output 4, increased engagement with the mountain chicken and nature, is captured in monthly reports, detailing online engagement with the project and in-person engagement events delivered or attended. We have begun the process of establishing a baseline of nature connection from which our impact can be measured though this is relatively experimental as it was developed in Europe and may be sensitive to cultural variation. The main measure of nature connectedness (the Nature Connection Index), which has been used to date, is not particularly sensitive to short-term changes (though it should detect changes over the lifetime of the project) and so we have begun trialling the ENACT framework developed by the RSPB, which is designed to detect changes in nature connectedness resulting from short-term engagement activities, such as hiking on the trails or interaction with project staff during a school visit or outreach event. Increasing nature connection, will increase people's willingness to engage in pro-environmental behaviours and so delivers on the planned Outcome of this project.

7. Lessons learnt

Over the past year a continuing challenging factor has been the COVID-19 pandemic. The associated curfews, travel requirements and working restrictions have played their role in impacting our project directly through school closures, curfews affecting essential husbandry, quarantine requirements for arrivals/travel and associated COVID sickness delaying objectives. Our ever-strengthening partnerships on island have been vital in providing support through these periods. Specifically, MNT's relationship with governing bodies enabled MCRP to gain increased freedom past curfew to ensure essential husbandry could be carried out and any unforeseen circumstances could be circumvented if required. Our partnership with DoE was also crucial in ensuring our activities were supported and could be carried out during this period. Our strong relationship and collaboration with DoE, with their backing at cabinet level is one that we would suffer without. It cannot be understated how important these government links and voices of support for Darwin projects are, engaging departments at all levels where possible should be sought by all projects to facilitate future fluidity of projects.

Our relationship with MNT is one of great benefit, strengthening over the second year, being fully integrated as partners. Shared objectives are held and fluidity of collaboration flows freely. Significant support has been provided, from staffing, accounting and financial management support to vehicle use where necessary, provision of office space and an overall inter-organisation team feeling, promoting a thriving work environment. Project success has no doubt been heightened with such a partnership and we highly recommend this to other projects.



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Last year saw the Ministry of Health undertake mosquito fogging across the entire populated island. This measure aimed at reducing mosquito numbers but could impact the live-food invertebrates we breed for the project, as well as the location of the mountain chicken enclosure. The department is aware of the programme and had previously agreed to notify in advance when such activities were to be carried out allowing for appropriate actions to be taken, but staff changes meant this did not happen. It was thanks to the well-known identity of the project that the community had alerted staff members in time. From this experience we aim to build on all relationships across departments, in this case, reiterating the projects vulnerabilities to the Ministry of Health to keep it at the forefront of thought with similar future activities. Additionally, alternate methods can be researched and proposed with the prospect of altering such practices for the better. We recommend projects consider such activities, how they may disrupt, identifying responsible bodies and engaging these to recognise their impact. The importance of creating and maintaining a recognised project identify cannot be understated, the support and thoughtfulness of the community is worth its weight in gold.

Both inter-Darwin and inter-island collaboration has occurred with great success (Annex 16 for photo of training by and for DPLUS106 staff & Annex 18). Project staff had a greater opportunity to increase skillsets when training on Darwin associated projects, creating important relationships between projects and a network of professionals that all have experience that can be utilised. Cross project collaboration also saw boosted morale amongst the team, being a part of and knowing that similar projects exist. Equally, the materialisation of our inter-island exchange not only strengthened project alignments at all levels of operation, it allowed for skillsets and knowledge exchange, empowering and enthusing staff members to perform to the best of their abilities. We highly recommend where projects exist with similarly aligned goals that cross collaboration be sought to the benefit of all parties, be it for skills exchange, boosted morale or relationship building.

Whilst social media visits and interactions across platforms has increased significantly, high impact media has notably been video footage, with our footage of a mountain chicken catching and eating a tarantula going viral on twitter with 65,000 views. We've learnt that a mix of media types and both frog and human outputs work best.

8. Actions taken in response to previous reviews (if applicable)

There were no comments in response to our Annual Report 1, but our lack of responses to the comments on our original application was noted. We address these below. Feedback in bold and our replies are in italics.

- **The workshop budget does not appear to be adequate. Please provide more detail about the plans for the workshop and how you intend to resource it;**

This workshop was always planned to be hybrid in nature (virtual and in-person) to reduce time impacts on busy staff members from international organisations and reduce the carbon footprint of the meeting - which ensured costs were lower than a fully costed workshop. Since the COVID pandemic, the price of international flights and the cost of living increases experienced, globally, mean we have sought additional funding for the workshop from a private donor who has agreed to meet up to an additional £5,000 in funding for the workshop.

- **It would be good to see this project linked to the turtle project in Montserrat also funded in this round (DPLUS106, led by the University of Exeter);**

We have regularly interacted with the project team when on-island in Montserrat providing training to their staff, and our Project Officers have received training in turtle monitoring from the team – boosting the skills available to DoE at project end, in line with our own objective. We will continue to interact with the turtle project staff when they are present and offer staff time to the project where it does not impact our operations.

- **It would be helpful to understand how long-term sustainability will be assured and whether the Government of Montserrat has made any commitments towards this;**

The Montserrat government is committed to the project, being signatories to a 20-year restoration plan for the species across Montserrat and Dominica. They are also committed to the continued employment of the returning member of staff seconded to the Mountain Chicken Project for the duration of the Darwin funding (Mr Weekes). The skills he gains throughout this project will be essential in ensuring DoE retains skilled individuals beyond the retirement of the current generation of DoE field staff. The Montserrat government will be participants in the five-year management plan workshop in Y3 of this grant, which will generate a plan to continue the conservation of this species in Montserrat.

- **Further information on the expected economic development gains of the project would have been welcomed. For example, the application claims that successful implementation will put Montserrat 'at the forefront of a conservation breakthrough, drawing attention from global scientific and conservation communities, in turn providing economic benefits to the island' but specific benefits aren't specified.**

The involvement of the Montserrat government in a scientific programme such as the Mountain Chicken Project, and its interaction with internationally recognised scientific institutions such as Durrell, ZSL, Chester Zoo, Nordens Ark and Bristol Zoo provides a public statement that the country is a good place to do science, and welcome to collaborative working. Indeed, since the Darwin funded Mountain Chicken Project began, an American University has begun visiting the island with students working on projects alongside the DoE and Ministry of Environment for education and research purposes. The Mountain Chicken Project has hosted students from this University ensuring the island is able to be open and supportive of such collaborations. It is difficult to specify direct economic benefits beyond increased recognition of the island by the general public following any news coverage on the project, and recognition by scientists who would be encouraged to carry out research on the island. It is likely this would translate into increased tourism / visitor revenue (though not readily directly measurable).

9. Other comments on progress not covered elsewhere

10. Sustainability and legacy

Our work has been promoted locally through local radio such as ZJB (primary news and radio station on island) and featured on 664 connect, a leading local website, with a large viewership

of especially younger people in Montserrat, one of our key targets for outreach activities. Posting regular social media content including photos, videos, blogs and competitions has this year seen a more than tripled average unique monthly engagements, from 808 to 2,812 and our average monthly reach hit 16,727 with our followers increasing from 1460 to 1855 across our three media channels, steadily growing throughout the year (see evidence Annexes 3-14). Our high impact video footage of a mountain chicken devouring a tarantula went viral reaching 65,000 views. This footage has since been incorporated into our outreach presentations, well received amongst all generations. Social media reposts have been seen across both regional and international outlets, ever increasing our project exposure. Additionally, our Darwin sponsored vehicle is well known on island with staff members regularly asked for updates or given stories and memories of times past, a real inclusion within the community.

Outreach sessions carried out through all primary schools and part of the secondary school saw over 350 students taught. We carried out lessons and outreach at both summer and easter clubs for children amongst other extracurricular activities (Annex 25), all of which will greatly increase the sustained legacy of the project.

Year two saw the recruitment of two part-time internships, increasing our local staff members to four, all of whom have taken over or are being trained in all aspects of the project, from husbandry of the mountain chicken to husbandry of the insect facility. All staff members have been accommodated by DoE in forestry skills, including bird and bat surveys (Annexes 16). Two interns were recruited from both the local high school and college, completing a month of training on all elements. This is being ran again during Y3 with the kind collaboration of MoHEYAS, encouraging succession of youth into environmental careers and training opportunities. We believe we have already witnessed an increase in both capacity to conserve biodiversity and nature connection.

Our outreach exit strategy is to ensure that our 2.5 year workplan is included within our partner institutions beyond the timeframe of this grant. We will review this workplan at the end of the project, with all outreach resources purchased through the Darwin grant and bearing Darwin branding, continuing to be utilised to promote Montserrat's unique natural heritage throughout the local community.

Aluminium weather resistant nature connection trail signage bearing Darwin logo's and legacy have been rolled out across four primary hiking trails on island (Annex 22). Through this initiative we have also been successful in engaging the Tourism division who are funding an additional 18 signs on three further trails, nearly doubling our intended coverage and exposure. This additional signage will also bare Darwin's logo and legacy, whilst being supported through a separate EU development grant awarded to Tourism.

The now infamous mountain chicken vehicle and our mascot "Levi" (whose name was selected by social media competition) will remain with full branding at the trust and continue to be utilised for mountain chicken field work and other wildlife conservation initiatives.

To conclude, the potential ecological and community legacy of this project is vast. Should our interventions prove successful and contribute to the restoration of this apex predator across the island, we will replace a missing part of the ecosystem, allowing it to fulfil its role in controlling small vertebrate and insect species which are thought to have increased, leading to an increased use of pesticide in Dominica (the only other island on which the species is found and underwent a similar decline). A generation of children who grew up without hearing the species can now hear this in a small pocket of the island which we hope to expand, once a core nightscape sound across the island.

11. Darwin identity

The Darwin logo is present on the project vehicle, insect breeding facility sign and on nature connection signage which has been deployed on Forest trails. In addition, the logo has been placed on the project website, and on all external presentations made by the project including outreach events. Finally, the Darwin has repeatedly been mentioned as a funder of the project

during radio show appearances to ensure the public understand Darwin's role in facilitating not only the project, but its impacts on the island and its biodiversity.

The Darwin funding continued and hugely expanded a small project which was already present on island (originally also started with previous Darwin funding). The project is now promoted as being a predominantly Darwin funded project, as our other funding comes from private institutions who do not wish to be publicised.

The Darwin Initiative is well recognised on Montserrat having funded the mountain chicken project between 2011-2014, and is on our project vehicles. As the brand of this project has been built through social media and interaction with the public, Darwin has once again become recognised as a facilitator of environmental projects with the community at its core. More information in Section 10.

Signage across nature trails on island sees the logo appearing on all 48 signs (See Annex 22). Outreach materials arrived on island including our project pop up tent, branded tablecloths, flags, banners (Annex 21). These have been used for various events including National Trust events and Easter celebrations with banners carried to outreach sessions across schools.

The project has both Twitter and Facebook pages. The latter is mainly used to engage overseas public and Facebook for local engagement. It has been very successful this year with an average of 2,812 unique engagements per month across our social media platforms, with 1855 followers and between 2,500-65,000 people 'reached' per month (See Annexes 3-14). We regularly tag Darwin in our posts to ensure Darwin receives recognition for the important funding role it plays in the project. After our Project Officer has returned from training in Jersey in May, we expect this to increase following a lull due to the reduced staff on island.

12. Impact of COVID-19 on project delivery

COVID-19 has impacted our project in several ways. International travel both from the UK to Montserrat for international expertise (e.g. for the Training Needs Assessment), and between Montserrat and Dominica for planned knowledge exchange trips between the islands have both been impacted. The Training Needs Assessment had to be modified again, with an in-person workshop scheduled for Q4 Y2 having to be pushed back an extra month to Q1 of Y3. The inter-island exchange trips began, though this was further complicated by the main airline on this route (LIAT) going into administration and with our reduced flight options, travel became overly complicated and more expensive. Quarantine restrictions on island for all arrivals restricted our ability for staff members to return swiftly to work.

With the impact of international travel, it meant supplies and equipment were unable to be carried in luggage by members that would otherwise be visiting the project. This saw us having to boost our postage budget to cover the cost of shipping supplies.

Though we were able to carry the majority of our outreach plans, a curfew and subsequent restrictions impacted two months of Q4 Y2, where we were unable to carry out any in person outreach. This, on the whole, was mitigated by a strong relationship with the schools, who warmly accommodating us to fit within their shortened schedules.

During this period of curfew and restrictions we worked closely with our partners the Department of Environment and the Montserrat National Trust in communicating the importance of the project to the police, ensuring that essential activities could continue to be carried out. Without the support of our partners, essential activities crucial to the welfare of the animals would have without a doubt been adversely affected.

As a project we continue to be very aware of health advice in Montserrat and ensuring it is followed to minimise the risk to our staff and partners. Following advice, we have minimised contact indoors and adhered to maximum group sizes. Before travel we have ensured all staff are PCR tested and have access to high quality masks to minimise the risk of infection. These masks have also been made available to our project partners when working with us. Our Project Coordinator has received their vaccinations thanks to a rapid rollout in Montserrat. We have also encouraged project partner staff to take these, though Montserrat vaccine numbers are on the rise at 50%, there is relatively strong hesitancy among some of the public.

With the spotlight on COVID, the increasing understanding of disease and transmission has led to an increased understanding when teaching outreach sessions. Notably, we are able to discuss and compare the transmission routes and methods that we have witnessed with COVID, to that of chytridiomycosis. Chytrid, believed to have originated in Asia, tracking transport routes around the globe until all but one continent (Antarctica) lays host to the fungus, a pan-zootic. To this extent, children have been able to understand, compare and visual disease transmission, helping them understand the plight of the mountain chicken more easily.

13. Safeguarding

Please tick this box if any safeguarding violations have occurred during this financial year.

If you have ticked the box, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

Durrell has updated our safeguarding policy, whistleblowing policy and Code of Conduct all of which have been provided to our in-country partners.

We have recorded no safeguarding concerns during the project to date. Future concerns will be dealt with in accordance with our policies, and all concerns recorded on a register. Durrell will lead on this where the concern is for, or because of the actions of one of our staff or project staff. Where this is a staff member of one of our partners working on the project, Durrell will provide the safeguarding policy and ask the partner organisation to deliver according to our policy – and provide a written account to add to the register.

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2021 – 31 March 2022)

Project spend (indicative) in this financial year	2021/22 D+ Grant (£)	2021/22 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs	██████	██████	██████	
Consultancy costs	█	█	█	
Overhead Costs	██████	██████	█	
Travel and subsistence	██████	██████	██████	
Operating Costs	██████	██████	██████	
Capital items	█	██████	██████	Inflationary pressures have resulted in increased costs in Montserrat, though we did not meet the ██████ threshold.
Others (breakdown in grey)	██████	██████	██████	
International Postage	██████	██████	██████	
Outreach materials	██████	██████	██████	
DESMAN training course	██████	██████	██████	
Molecular diagnostics consumables	██████	██████	█	
Batteries for torches / cameras	█	██████	██████	
Field clothing / footwear	█	██████	██████	
TOTAL	██████	██████		

15. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

I agree for the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	Y
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	(without Annexes)
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	Y
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Y
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	Y
Have you involved your partners in preparation of the report and named the main contributors	Y
Have you completed the Project Expenditure table fully?	Y
Do not include claim forms or other communications with this report.	