Darwin Plus:
Overseas Territories Environment and Climate Fund
Annual Report

Darwin Plus Project Information

Project reference	DPLUS117
Project title	Cayman Islands Coastal Education Guide
Territory(ies)	Cayman Islands
Lead organisation	Mangrove Action Project
Partner institutions	Cayman Islands Ministry of Education, CI Department of Environment, CI National Trust, Mangrove Education Project, Sea Elements/Clever Fish, Caribbean Utilities Corp.
Grant value	
Start/end dates of project	
Reporting period and number	April 2020-March 2021. Annual Report #1
Project Leader name	Martin Keeley
Project website/blog/social media	www.mangroveactionproject.org
Report author(s) and date	**Martin Keeley, Dylan Skeffington, Dominic Wodehouse. May 2, 2021.**

1. Project summary

The ecosystems that make up the 'coastal lagoon' – including mangroves, coral reefs, and seagrass beds – are critically important to maintaining both the biodiversity and the overall health of tropical ecosystems, and are also some of the most threatened. Environmental crises require people who understand the complexities of current issues to create solutions to these problems. Globally, educators have accepted the task of training students to become informed decision-makers, critical thinkers and communicators. This project produces and begins the implementation of an education guide that would enhance students' environmental knowledge, awareness, and responsibility of tropical coastlines with an emphasis on associated local ecosystems such as coral reefs, mangroves, and seagrass beds.

The educational curriculum is to be adapted specifically to the ecology of the Cayman Islands, and includes a general educational guide, a teachers' training workshop, and hands-on activities and field trips for students to better acquaint them with their local ecology. Through producing an educational curriculum on these ecosystems and then training teachers in its implementation, students will come to better understand, value, and prioritize these ecosystems, both in their everyday life and in future decision-making. The increased understanding and appreciation of these coastal ecosystems will in turn help current and future generations to protect and preserve their health and associated biodiversity.

2. Project stakeholders/partners

MAP's primary partner in the Cayman Islands is the Mangrove Education Project (MEP) which has both supervised and monitored the ongoing progress of the development and application of the *Coastal Education Guide* (CEG) and related materials.

The Ministry of Education has been involved on a continual basis with guidance and focus on the linking of the CEG to the new National Curriculum (first introduced in autumn, 2019.) In conjunction with both the ministry and local schools we carried out a series of pilots and school workshops for teachers and students. Feedback from these was utilised to adapt and incorporate revised teaching and resource materials in the guide.

We have been fortunate in the public schools that we have been able to partner with Ms. Angela Johnson, the Year 6 teacher at West End Primary School on Cayman Brac who has enabled us to apply many of the activities and information in the co-teaching of her science class. Assistant teacher, Daniella Christian – who is also a Mangrove Ranger – has provided back-up and resource materials for the CLTG especially artwork.

We have worked extensively with members of the Cayman Islands Department of the Environment to ensure that our scientific and geographical materials are accurate as well as establishing a new Year 11 high school research program in National Trust land in the Central Mangroves. This was to establish a plot to build base-line data ranging from species biodiversity to peat depth and involved Ms Stefania Lacchelli – biology teacher at the Cayman International School (CIS), which has been a key partner in implementing various aspects of the Coastal Lagoon curriculum. This will involve the extensive incorporation of the curriculum in the school's science programs and is also being extended to the other private schools in Grand Cayman. Bill Lamonte, another science teacher at CIS, has also been actively involved in an ongoing process of discussion, application and monitoring or the various resource materials.

The CIS research work on National Trust land is indicative of the close working relationship we have with the National Trust, especially the Education/science officer, Catherine Childs. Ms Childs has worked with us on all levels – from the development of the various resource materials to the training of the Mangrove Rangers* and the delivery of the materials during classroom pilots.

Sea Elements/Clever Fish have provided both classroom support and field marine support in the training and application of the curriculum and have – through Mike Nelson who heads up Sea Elements – provided logistical support by providing both exploration vessels and kayaks for the field work.

Ms Billie Bryan has been key in the development of the MEP website as well as the Mangrove Rangers website, the latter tracking the implementation of many of the CLTG teaching materials that have been (and are constantly being!) developed by Ms. Marnie Laing.

We also worked with Dr Deborah Beale at the University College of the Cayman Islands and were able to use the college lab for some lab-based activities, and Ms. Lisa Wood from the International College of the Cayman Islands where we were able to use classrooms for pilots and preparation for field trips into the Central Mangrove Wetlands in Grand Cayman.

** From the community point of view, the Mangrove Rangers have been our most successful venture in both the education and research applications for the CEG and materials. Drawn from students who either graduated last year or could not return to college in the UK, Canada or the US, and could not find work, a selection process produced 10 active Rangers who have been involved in the application of all aspects of the CEG and materials. This will be described in detail later in this report.*

3. Project progress

**Note that in the agreed-upon logframe the indicators served as reference for 'activities' (and as such there are no formally listed activities).*

The majority of planned activities were carried out with some adaptations caused by the impact of Covid-19 on the Cayman Islands education system. This has involved focussing more on the electronic distribution of the resources of the *Coastal Education Guide* (CEG).

Both local teachers and scientists were consulted on a regular basis – the teachers in the content and production of the CEG, and scientists from the Department of Environment in its scientific content. Local organisations – in particular the Cayman Islands National Trust – were consulted in both the materials in the CEG as well as its delivery in the education system.

During the six months of the Covid lockdown in Cayman, teaching in the school system moved on-line. As a result it was decided to expand the teaching guide to include a series of short "how to" videos that go over running activities and field trips. This was begun in March and will be completed by the end of the school year in July.

There has been a massive shift towards remote teaching – again in response to lockdown and safety protocols. We therefore used a variety of methods to incorporate remote teaching that will be available when we begin more formal the teacher training workshops the 2021/22 school year. The first of these was to create a new organisation called the Cayman Islands Mangrove Rangers under the umbrella of our Cayman partner, the Mangrove Education Project. The Rangers were launched on World Mangrove Day on July 26, 2020, and provide support for the implementation of the CEG.

Since their formation and training the Rangers have taken on a variety of tasks. They will be assisting in teaching during the pilot project and continuing in this mode when we run the teacher training workshops. Two of the rangers are videographers and will be videotaping the hands-on activities during the pilots and these will be available on-line through the CEG website, which will help contribute to the transition to online materials. Other rangers are handling social media and organisational management. The video-taped activities will be an extension of the Guide itself which we are currently in the process of digitising as well as– again because we may need to go back into remote teaching if the pandemic again requires safety protocols. This will also make it easier to transfer the program for use in the other UKOTs in the 2021-22 school year.

Because of the incorporation of more digitised materials there has been a minor delay in the launching of the website which is still under construction. The site is being designed to incorporate all the added interactive projects and this process should be completed by the end of the 2020/21 school year.

Ms. Catherine Childs continues to develop presentation materials for environmental workshops. Because the base environmental curriculum is unlikely to start in its workshop setting in Cayman schools until the 2021/22 school year, Ms. Childs' energies have been expended at hosting environmental workshops for the mangrove rangers who are also being trained to monitor and be "environmental keepers" of the lagoon ecosystems.

The physical publication of the *Coastal Education Guide* has also been delayed until the 2021/22 school year in September when it will be given a major launch. While some classes and teachers have been taught/trained on a one-on-one basis, the majority of the implementation of the CEG (including the main teachers' workshops) has been delayed until the 2021/22 school year, largely due to constraints brought on by covid. However, the hands-on activities, as well as the majority of the online activities have either been developed or are in their final stages of development, and will be ready for implementation when the CEG has its big launch at the beginning of the 2021/22 school year. Moreover, additional materials that will aid with the transition to online work and training are in development – such as a series of 'how-to' videos that cover the teaching of the curriculum (see Annex 3.5).

Bringing other UKOTs into the fold has gone generally according to the planned schedule, since it has not yet involved activities in the field which could be restricted by Covid. This is largely being accomplished through liaising via the National Trusts of the UKOTs.

3.1 Progress towards project Outputs

1. *Coastal Education Guide* (CEG) for use in the Cayman Islands is developed using latest and most pertinent science for the local ecology.

   The CEG has been developed with all its associated materials. These are in the final processes of being co-ordinated and integrated. We anticipate this will be completed by the end of the 2020/21 school year. The science material has been reviewed by local scientists from the Department of the Environment including Mr. Fred Burton and Mr. John Bothwell; from the National Trust including Ms Catherine Childs, from the Mangrove Action Project including Dr. Dominic Wodehouse, and from the University College of the Cayman Islands including Dr. Deborah Beal. (See Annex 3.4)

2. Educational guide is published and distributed prior to general implementation of curriculum

   While the majority of the content of the CEG has been produced – both copy and artwork – we have not yet reached a stage where we can publish. We need edit and proofread the final copy prior to publication. In the meantime, we have been piloting the various activities that are part of the guide to ensure they are effective in the classroom. The CEG guide will be published and ready for distribution by the start of the 2021/22 school year in September. (See Annex 3.2)

3. Website and associative materials are developed to augment the capacity-building of educators and the interactivity of the educational guide, as well as serving as a tool for M&E.

   The same is true of the website and associated materials. Much has been done, both with the website and the different kinds of materials – both interactive and supportive. They will be ready for distribution at the start of the 2021/22 school year in September's launch. (See Annex 3.5)

4. Associative activities are created and used to supplement in-classroom educational component of the *Coastal Education Guide*.

   The activities have been created and many of them piloted in a classroom setting in both public and private schools. A series of "how to" videos are being created to enable teachers to easily carry out the activities in their classrooms. They will be ready for distribution at the start of the 2021/22 school year in September's launch. (See Annex 3.1, 3.5)

5. Capacity of local educators is built to teach the *Coastal Education Guide* into their classrooms.

   Owing to the school and classroom restrictions caused by reaction to Covid-19, it has not been possible to run full teacher workshops. Instead, these have been carried out on a one-at-a-time school-by-school basis. Depending on class sizes this can amount to four or five teachers. (See Annex 3.1)

6. Beginning of expansion of *Coastal Education Guide* into education systems of other five Caribbean UKOTs with similar coastal ecosystems

   Because one of our key partners is the National Trust of the Cayman Islands we have reach out to the national trusts on each of the OTs, as well as several other local NGOs. We will be ready to build on this in the 2021/22 school year.

3.2 Progress towards the project Outcome

Students in the Cayman Islands and other UKOTs in the Caribbean are educated on local coastal ecosystems, and are aware of environmentally sound actions and policies affecting these ecosystems, including coral reefs, mangroves, and seagrass beds.

1. All students in Year 5 and 6 of the Cayman Islands public schools (1550-1650) have engaged in the curriculum taught using the *Coastal Education Guide* by the end of the second year of the program.

   By the end of the first year (March 31, 2021), because of the impact of Covid-19, students in several public and private schools had been taught on a class-by-class basis. Pilot tests of several activities were carried out and evaluated (see Annex 1). It was anticipated that, towards the end of the school year, more schools would be accessible. It is anticipated, based on projections, that this specific outcome will be realised by the end of the second year of the project.

2. 75% of students' attitudes towards and knowledge of coastal environments are positively changed by the implementation of the curriculum.

   Based on interviews before and after the various classes it was clear that students who had been involved in the pilot projects had come to a stronger understanding of the value of the coastal ecosystem and its inter-relationships. If we are able to implement the required number of workshops and classroom activities, we anticipate that we will reach our 75% goal. Much will depend on the long and short-term impact of Covid-19 on the Cayman education system.

3. Curriculum in the Cayman Islands schools become self-sustaining by end of initial project period.

   Initial results from the pilot projects as well as observations by the Ministry of Education indicate that the *Coastal Education Guide* will be fully integrated into the Cayman curriculum. (see attached STEM letter, Annex 3.4). There are no other locally produced curriculum-based resources of the same kind as the *Coastal Education Guide* and so it will fill a special niche in the curriculum.

4. Curriculum expands to other UKOTs by the end of the second year.

   Several NGOs in different UKOT's have already been approached – especially those in the National Trust network – and all are interested in incorporating part if not all of the *Coastal Education Guide* in their schools' curriculum.

Overall, assuming that the situation with Covid-19 remains stable and allows for workshops and classrooms to continue as planned, the outcome seems achievable within the allotted time frame.

3.3 Monitoring of assumptions

Assumption 1: COVID-19 conditions will allow for schools reopening to adhere to project timeline. Educators will use the *Coastal Education Guide* as a tool in educating their students on the local coastal ecology of the Cayman Islands.

Comments: Schools have reopened but are still in fallout from being closed an "on-line" for 7 months as well as incorporating the new UK curriculum at the same time. The project timeline has been restructured to be fully operational by the 2021/22 school year in September. In the meantime, some schools will be open in the late spring and pilots have also been carried out with the Mangrove Rangers and students and online materials developed for incorporation in the project. However, full-scale teacher workshops are unlikely to be implemented until the Spring semester. This under the supervision of the Cayman Islands Ministry of Education.

Assumption 2: The *Coastal Education Guide* is completely integrated with Key Stage 1,2 and 3 of the Science, Social Studies and Arts sections of the new Cayman Islands Primary School curriculum.
Comments: The integration has already commenced as we work directly with key officers in the CI Ministry of Education such as Stephen Ta'Bois, the STEM co-ordinator. It will be completely integrated by the 2021/22 school year.

Assumption 3: MAP/MEP is able to locate additional funding for expanding the curriculum to additional UKOTs.
Comments: Some additional funding has been obtained, and application has been made to the EU ReSEMBID programme for extended funding. The Concept Note has been approved by the Cayman Islands Government and we are awaiting the next step. Applications have also been made to other funders including the Disney Conservation Fund. We anticipate there may be a slight delay in the overall expansion of the programme to the other UKOT's (following the initial contacts), but working with the affiliated National Trusts to the CI National Trust, we anticipate the programme will integrate with the Trusts' own educational programmes as they have in the Cayman Islands.

Assumption 4: By the end of the initial project period, educators have shown the ability to teach the curriculum, allowing it to be 'self-sustaining' in subsequent years.

Comments: This will not be completed until the second period of the second year of the grant as the programme accelerates following its full launch in September, 2021. We will be continuing the pilots and full class application of the curriculum during the Spring semester of 2021 as well as through the summer with the Mangrove Rangers and at summer camps as we did in February, 2021.

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

The goal in creating and implementing the *Coastal Education Guide* is to encourage the current and future preservation of coastal ecosystems through instilling an understanding and appreciation for these biodiverse habitats. This first year was spent largely developing and trialling the curriculum and associated activities. As such, the impacts on the overarching objectives of Darwin Plus will be felt in succeeding years, once the curriculum is in full swing.

While the Coastal Education Guide meets the key components of the Environmental Charter in educating students, teachers and their communities about the value of the inter-related mangrove-seagrass-coral reef ecosystems, much of the past year has also been spent working towards educating and advocating mangrove protection, which was announced with the implementation of the Mangrove Species Conservation Plan in April, 2020.

In parallel with the development of the Coastal Education Guide, the creators of the curriculum have worked extensively with the CI Department of the Environment (DOE) to find ways to enforce mangrove protection and avoid their flagrant destruction. We have also worked though the newly formed Mangrove Rangers to support the implementation of the new expanded marine parks system by the DOE (see Annex 3.2 for media coverage).

We have also worked with the National Conservation Council (NCC) to find means to protect the marine environment while at the same time supporting sustainable development. The National Conservation Law for the Cayman was finally passed in 2016 after years of debate, and we have incorporated its basic principles of ecological protection into the framework of the Coastal Education Guide.

The guiding principles of the NCC charter mirror those of the Environmental Charter. These include the conservation of biodiversity and sustainability. To use our natural resources wisely for future generations; to seek expert advice on all aspects of the environment; to aim for solutions that benefit both environment and development; to contribute towards the protection of the environment both locally and globally; to safeguard and retore local species, habitats and landscape features, and to celebrate our local culture and environment with local communities.

5. OPTIONAL: Consideration of gender equality issues

6. Monitoring and evaluation

There are two separate phases of the monitoring and evaluation; the first involves monitoring of the initial creation and implementation of the curriculum, and the second monitors the effectiveness of the curriculum through direct monitoring and evaluation of the students and teachers taking part in the pilot project, and adapt it as necessary.

So far, the first phase of monitoring has been relatively straight forward, since it simply involves monitoring the process of the creation of the curriculum. This has involved an analysis of the effectiveness of the material and hands-on activities with students during the pilots. In addition, there have been cross-checks with the Ministry of Education specialists to ensure the CLE curriculum resources are directly linked to specific learning outcomes in the newly introduced UK curriculum. On-going evaluations on the relevance and approach toward the curriculum's content and were planned to be carried out during the teacher workshops. However, these have been done on an individual basis (which will continue during the spring/summer terms) as full teacher workshops and class activities will not be possible until the autumn of the 2021/22 school year. Then full scale monitoring/evaluation will be implemented.

Social studies and science specialists from the Cayman Islands Ministry of Education/ Department of Environment have been monitoring and overseeing the content and implementation of the pilots. The project's M&E is the responsibility of the team delivering and implementing the CLE curriculum and resource materials. Following the advent of Covid-19 and its impact, it was decided to concentrate on implementing the monitoring process through on-line facilities on the MEP website and which is currently under reconstruction.

The second phase of the monitoring involves in-class questionnaires, given separately to both students and teachers, as well as monitoring done by the specialists from the Department of Environment / Ministry of Education of the in-class implementation of the curriculum. These questionnaires are to be modeled after similar monitoring surveys conducted in previous Marvellous Mangroves curriculums, and will be evaluating the students to see whether the learning process has been effective in augmenting their understanding of coastal ecosystems, as well as good stewardship practices.

Baseline data is gradually being collected in order to establish the students' existing environmental knowledge of coastal ecosystems, providing a baseline information to compare end results with. This is still in the pilot phase and will be fully implemented in Autumn 2021.The students will also be asked to provide feedback, done through the website created for the Coastal Education Guide. These surveys will take place 18 months into the project, and then again at the end of year 2 the project. The purpose of this monitoring is to determine whether the curriculum 'stuck with' the students, and to provide feedback on any necessary adjustments for moving forward with the curriculum in subsequent years. This type of monitoring and evaluation has been carried out in other Marvellous Mangroves programmes, and has been written about in a master's dissertation.

The questionnaire/survey for teachers will be of a different format and gauge both how well they have learned about the coastal ecosystems, and incorporate their feedback on the implementation of the curriculum.

7. Lessons learnt

The overall research and preparation of the guide itself and related materials has worked well over the past year, as has the classroom piloting of the project. Covid-19 has impacted access to the classroom, and focussed the project toward more IT related materials.

The project is using the Cayman Islands Mangrove Rangers, formed in the fall of 2020, to help support the Coastal Education Guide production and dissemination. This includes the project pilots and field trips videotaping for later made "how to" do the activities videos.The guide and associated website highlight the value of, and the need to conserve, Cayman's coastal ecosystems. This communication is being amplified by a public communications programme and combined with an intense patrolling and monitoring campaign to monitor the Covid-19-induced construction boom to ensure the mangrove conservation regulations are adhered to, mangroves are not destroyed, and biodiversity not lost.

Obviously, it would have worked best if there had been no Covid-19 to contend with. We have had to circumnavigate this problem, and so much work has been done remotely, except for several pilots which have been carried out by making special arrangements with a specific Year 6 class at West End Primary School on Cayman Brac.

The same is true of the IT. Because of the long lasting effects of Covid-19 as well as the increased use of remote online education, we have refocussed on several aspects of teacher training such as the production (underway) of "how to" videos that enable teachers to see how to run relevant activities. This is something we hadn't planned before, but it will be especially effective in training teachers both in Cayman and in the other UK OTs.

What worked well is our liaison and interface with government agencies in the Ministry of Education and Department of Environment as well as private schools such as the Cayman International School. The latter have much more flexibility in difficult circumstances and are therefore much more able to adapt to special projects.

The creation of the Mangrove Rangers to facilitate the teaching and videotaping the process is something that we would have done as part of the project from its initial stages. Their incorporation has enabled us to tackle more challenges from the Covid-19 related difficulties.

Future plans - especially for working with the other UK OTs – will incorporate such things as the additional IT online learning materials., as well as creating a template for a local organisation such as the Mangrove Rangers in each of the OTs to help facilitate the implementation process of the Coastal Education Guide.

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

9. Other comments on progress not covered elsewhere

The project has been enhanced over the past year by the creation and inclusion of the Mangrove Rangers, who have assisted in many aspects of the programme. While the Mangrove Rangers were not part of the original application to Darwin, they have been instrumental in assisting in the teaching during the pilots to the shooting of videos and development of materials that enhance the learning process, among many other activities (though it is good to note that no Darwin funding has been used for the Rangers' activities in any way besides those directly related to the implementation of the CEG).

10. Sustainability and legacy

The CEG was designed with long-term sustainability at its core, with the aim of utilising the education system to positively impact current and future generations' attitudes towards their local coastal ecosystems. The current trajectory, along with the original 'exit strategy', is still intact – with the caveat that the program may be expanded in coming years to include further follow-up work in other UKOTs. Additional funding is being sought for both this expansion, as well as the expansion of the Cayman Island Mangrove Rangers – an offshoot organisation formed under the same umbrella group (Mangrove Education Project - MEP) that is developing and implementing the CEG, which will aid in the implementation of the curriculum, as well as accomplishing other tasks such as monitoring of the Cayman mangroves and conducting additional community outreach efforts.

11. Darwin identity

Support from the Darwin Initiative has been emphasised in media announcements and in social media postings. Because most additional funding for the project was redirected towards Covid-19 related concerns, Darwin is currently the major supporter of the project, although other, smaller sources of funding have also been obtained.

In terms of understanding of Darwin Initiative in Cayman, all partners involved are well aware of Darwin and its support of environmental projects in the islands. We have also educated those with whom we have been in contact on a regular basis, from teachers to government employees and members of Cayman's various communities, on Darwin's involvement in the program.

The lead organisation, MAP, has not mentioned Darwin often in social media accounts as of yet, but will do so increasingly as the project moves beyond the development of the curriculum to the stages of implementation, as updates on pilot programs and in-field trips make for more actionable social media content than updates on the creation of the curriculum.

12. Impact of COVID-19 on project delivery

The main problem we encountered was the redirection of some of the projected funding towards Covid-19 related needs. In addition, the closure of schools in the Cayman Islands because of Covid-19 has meant that we needed to redirect their participation in the pilot as well as in the projected teacher involvement. Initially, we were able to resolve this by organising holding the pilots in a private education facility, Clever Fish, the partner of Sea Elements which

is partnering with us in the project. More recently – in the New Year – we were able to work directly in the classroom of both public and private schools to pilot and deliver various aspects of the CEG.

The co-ordination of various specialists has also been somewhat hampered by the vicissitudes of the psychological impacts of Covid-19. Even though we have been lucky in the Cayman Islands to be Covid-free since July 2020, the monetary and sociological challenges have impacted deliverables and scheduling. For example, Alex Bennett who is creating an interactive "cartoon" project called Gums (which forms part of the online interactive CEG website), had serious computer problems and ended up having the purchase a new machine which required obtaining a bank loan!

In general, the Covid-19 pandemic has forced the implementation of the curriculum to be increasingly geared towards online learning and forced the rescheduling of workshops and other planned in-person activities. This has resulted in a slight delay in some of the implementation (with the general teacher workshops, for instance). However, the current stabilisation of the pandemic and adjustment to the implementation planning means that the overall goals of the programme will likely still be met by the end of the project period.

(See other responses for further specific areas in which the Covid-19 pandemic has impacted the implementation of the Coastal Education Guide.)

13. Safeguarding

- No safeguarding violations have occurred during the project period. The Safeguarding Policy of the lead organisation (Mangrove Action Project – MAP) has been shared with downstream partners. However, other partners – such as the various Cayman public and private schools that will be involved in the implementation of the CEG – have additional safeguarding policies to which they adhere.

14. Project expenditure

Table 1: Project expenditure <u>during the reporting period</u> (1 April 2020 – 31 March 2021)

Project spend (indicative) in this financial year	**2020/21 D+ Grant (£)**	**2020/21 Total actual D+ Costs (£)**	**Variance %**	**Comments (please explain significant variances)**
Staff costs	[redacted]			
Consultancy costs				
Overhead Costs				
Travel and subsistenc				
Operating Costs				
Capital items				
Others (Please specif				
TOTAL				

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021 – <u>if applicable</u>

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
Impact **Students in the Cayman Islands - and through them their communities - gain an appreciation of local coastal ecology, and thus carry out sound environmental practices for coastal ecosystems.**		Program has been initiated, and is still in beginning phases. As such – and because the program is educational in nature – most of the results and impacts on biodiversity will occur in succeeding years.	
Outcome **Students in the Cayman Islands and other UKOTs in the Caribbean are educated on local coastal ecosystems, and are aware of environmentally sound actions and policies affecting these ecosystems, including coral reefs, mangroves, and seagrass beds.**	0.1 All students in Year 5 & 6 of the Cayman Islands public schools (1550-1650) and private schools (1200) have engaged in the curriculum taught using the *Coastal Education Guide* by the end of second year of program 0.2 75% of students' attitudes towards and knowledge of coastal environments are positively changed by the implementation of the curriculum 0.3 Curriculum in Cayman Islands school system becomes self-sustaining by end of initial project period 0.4 Curriculum expands to other UKOTs by end of the second year of program	0.1 Pilot classes have been taught to several individual classes. Main body of students will be taught in 2021/22 school year **<u>(See Annex 3.1 – photos of field trips, classes, etc.)</u>** 0.2 Initial oral surveys in pilot programs show increased understanding of ecosystems among participants. Suggests that 75% benchmark will be met when full-scale surveys will are conducted. 0.3 Initial results and collaboration with Ministry of Education indicate curriculum will be incorporated into school systems and used in future **<u>(See Annex 3.4 – letter from MOE)</u>** 0.4 Initial outreach to other UKOTs (through NGOs & National Trust) has taken place, with positive feedback	- Continue pilot programs through remainder of spring semester - Run trials of the CEG implementation during summer camps - Full launch of CEG program with teacher workshops and school implementation during autumn - Introduction of program to additional UKOTs, liaising through National Trusts
Output 1. *Coastal Education Guide* for use in the Cayman Islands is	1.1 Local teachers are consulted for the production of the content in guide prior to publication	*(*Report general progress against indicators, comment on their appropriateness, and reference where evidence is provided e.g. *Evidence provided in section 3.2 of report and Annex X*)	

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
developed using latest and most pertinent science for the local ecology.	1.2 Experts consulted in creation of *Coastal Education Guide* prior to publication 1.3 Local organisations with materials related to the coastal lagoon ecosystem consulted in creation of education guide prior to publication	1.1 Local teachers have been consulted **(see letter from DOE in Annex 3.4)** 1.2 Experts have been consulted in materials related to the CEG **(see letter in Annex 3.4 – letter from DOE, MOE)** 1.3 Local organisations have likewise been consulted	
Activity 1.1 N/A *Note that indicators serve as reference for 'activities' in agreed-upon log-frame		N/A	
Output 2. Educational guide is published and distributed prior to general implementation of curriculum	2.1 Educational guide copies developed / published prior to workshops in first quarter of 2021 2.2 Sufficient copies (100) of the educational guide are printed and distributed to educators and curriculum coordinators prior to implementation in classrooms in Spring 2021	2.1 Educational guide has been developed **(see Annex 3.3 – link to examples of CEG pdf)**. However, guide has not yet been published due to covid-related delays. Plans are in place to publish the guide prior to commencement of 2021/22 school year. 2.2 Plans are in place for sufficient guides to be printed and distributed prior to 2021/22 school year	
Output 3. Website and associative materials are developed to augment the capacity-building of educators and the interactivity of the educational guide, as well as serving as a tool for M&E.	3.1 Supplemental materials developed to augment the in-classroom educational component, prior to full implementation of curriculum in spring 2021 3.2 70% of educators and their students utilize the basic site during the pilot program starting in September 2020 3.3. Additional games, activities, materials on website are developed prior to workshops in Spring 2021	3.1 Supplemental materials largely developed (includes Powerpoints, graphics, 'how-to' videos, etc.) **(See Annex 3.5 – link to folder on supplemental materials)** 3.2 Website development is in final stages, and as such will be used during implementation of the 2021/22 school year. 3.3 Additional games and activities have been developed 3.4 The program still has the intention of using the website for linking to other UKOTs (once those are more firmly established), commencing in the second year of the program	

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
	3.4 Links to schools in other UKOTs with coastal lagoon ecosystems established through the website by the end of the initial project phase in the second year		
Output 4. Associative activities are created and used to supplement in-classroom educational component of the *Coastal Education Guide*.	4.1 Hands-on educational activities developed prior to main workshop in spring 2021 4.2 Supplemental videos developed prior to workshops in spring 2021 4.3 Students conduct hands-on activities and data collection, both in the classroom and in the field, to enhance their learning through the educational guide	4.1 Activities are developed, will be ready to demonstrate in main workshops in 2021/22 school year **(See Annex 3.5 – sublink of 'how-to' videos, examples of activities)** 4.2 Videos are in the process of development – will be ready to demonstrate in main workshops during 2021/22 school year 4.3 Activities and data collection have been done by students in pilot programs, will also be carried out during the 2021/22 school year **(See Annex 3.4 – CIS Letter)**	
Output 5. Capacity of local educators is built to teach the *Coastal Education Guide* into their classrooms.	5.1 Logistics for a capacity-building workshop completed in advance of workshops 5.2 Pertinent educators participate in capacity-building workshops 90% of teachers (26 public schools and 22 private) respond. 5.3 Teachers are able to successfully conduct lessons in their classrooms using the education guide and resources by beginning of 2021/22 school year.	5.1 Due to covid restrictions, full teacher workshops will take place during 2021/22 school year. 'Capacity' of individual teachers has been built on a case-by-case basis (again, due to covid restrictions) 5.2 Workshops will take place in 2021/22 school year (see above, 5.1) 5.3 With new covid-adjusted timelines, aim is to have teachers fully be able to conduct lessons by beginning of 2022	
Output 6. Expansion of the *Coastal Education Guide* into the classrooms and education systems of other five	6.1 Copies of the *Coastal Education Guide* tailored to the ecology of each of the UKOTs with similar	6.1 Should be on track to adjust CEG to additional UKOTs by end of second year	

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
Caribbean UKOTs with similar coastal ecosystems.	coastal ecosystems are developed by the end of the second year 6.2 Teachers in UKOTs trained on implementation of the *Coastal Education Guide* for each OT through capacity-building workshops over Y1 Q4 – Y3 Q4. 6.3 Students from other UKOTs engaged in curriculum taught using the *Coastal Education Guide* 6.4 Appointment of local coordinator for each additional UKOT in which the guide will be implemented 6.5 Ongoing evaluation of effectiveness of Coastal Education Guide on teachers and students	6.2 Teachers will be trained on implementing curriculum after CEG is developed for each additional UKOT. Training will likely begin taking place late in Y2. 6.3 Students in additional UKOTs will take part in curriculum once associated CEGs are developed, will be surveyed accordingly 6.4 Initial outreach to other UKOTs conducted via National Trust, once CEG is finalised further initiation of CEG in each UKOT (including choosing of main point of contact) will take place – likely later in 2021 6.5 Evaluation will occur once CEG begins implementation in additional UKOTs, likely late 2021-22.	

Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed) - if applicable

N.B. if your application's logframe is presented in a different format in your application, please transpose into the below template. Please feel free to contact Darwin-Projects@ltsi.co.uk if you have any questions regarding this.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Students in the Cayman Islands - and through them their communities - gain an appreciation of local coastal ecology, and thus carry out sound environmental practices for coastal ecosystems. .			
Outcome: Students in the Cayman Islands and other UKOTs in the Caribbean are educated on local coastal ecosystems, and are aware of environmentally sound actions and policies affecting these ecosystems, including coral reefs, mangroves, and seagrass beds.			
Output 1 *Coastal Education Guide* for use in the Cayman Islands is developed using latest and most pertinent science for the local ecology.	1.1 Local teachers are consulted for the production of the content in guide prior to publication 1.2 Experts consulted in creation of *Coastal Education Guide* prior to publication 1.3 Local organisations with materials related to the coastal lagoon ecosystem consulted in creation of education guide prior to publication	1.1 Work plans and minutes of meetings in which local teachers are consulted for input. 1.2 Written confirmation that Cayman Islands Department of Environment consulted prior to production of the guide; editor and coastal ecology experts review final draft of educational guide prior to publication to ensure accuracy and pertinence of information. Minutes of meetings taken in which local scientists are consulted on content. 1.3 Cayman Islands National Trust, Dart Cayman, Sea Sense, Mangrove Education Project, CCMI provide supplementary materials for guide;	The Cayman Islands Department of Environment will provide most current and relevant knowledge for coastal ecology. Educators and curriculum coordinators are willing to meet and productively collaborate. The Cayman Islands Department of Environment and Ministry of Education are willing to be consulted on the content of the educational guide. Local organisations continue willingness to co-operate on sharing associated materials.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
		records kept and direct links made available through interactive website and Cayman Env Educators Association	
Output 2 Educational guide is published and distributed prior to general implementation of curriculum	2.1 Educational guide copies developed / published prior to workshops in first quarter of 2021 2.2 Sufficient copies (100) of the educational guide are printed and distributed to educators and curriculum coordinators prior to implementation in classrooms in Spring 2021	2.1 An editor will review final draft of guide before it is published and distributed, and will provide a written notice of assessment of materials itemized. 2.2. Evaluation questionnaires following workshop, including confirmation that attendee has received copy of educational guide; workshops attendance sheets (to determine who should have received copies).	The developers of the educational guide will be able to convey the science in a manner that is relatable and enjoyable to educators and their students. An editor will be available to review and assess the final materials before publication.
Output 3 Website and associative materials are developed to augment the capacity-building of educators and the interactivity of the educational guide, as well as serving as a tool for M&E.	3.1 Supplemental materials developed to augment the in-classroom educational component, prior to full implementation of curriculum in spring 2021 3.2 70% of educators and their students utilize the basic site during the pilot program starting in September 2020 3.3. Additional games, activities, materials on website are developed prior to workshops in Spring 2021 3.4 Links to schools in other UKOTs with coastal lagoon ecosystems established through the website by the end of the initial project phase in the second year	3.1 All educators participating in capacity-building workshops receive a copy of the lesson plans, supplemental videos, and interactive ecology games, in addition to educational guide 3.2 Educators and their students in pilot program successfully utilize the site, logging in and interacting with the available programs; curriculum coordinators able to monitor these interactions and conduct M&E of the implementation of curriculum in part through the website. 3.3. Video-taped pilots with ME from teachers and students during review of tapes. Posted reactions on website. 3.4 Record of contacts made with schools, teachers and education	The interactive website is fully operational and allows curriculum coordinators to monitor educators' activities within the program. Educators and students are able to and do use the website as part of the curriculum. Education Guide will eventually begin being implemented UKOTs, and teachers and schools there are willing to set up and share the Coastal Lagoon Ecosystem Guide and resources and interact through the related website

Project summary	Measurable Indicators	Means of verification	Important Assumptions
		departments in UKOTs with similar coastal ecosystems; links established in website for teacher and student connections (as found in marvellousmangroves.org website). Responses coordinated and analysed.	
Output 4 Associative activities are created and used to supplement in-classroom educational component of the *Coastal Education Guide*.	4.1 Hands-on educational activities developed prior to main workshop in spring 2021 4.2 Supplemental videos developed prior to workshops in spring 2021 4.2 Students conduct hands-on activities and data collection, both in the classroom and in the field, to enhance their learning through the educational guide	4.1 Local educators and scientists consulted in the formation of these activities, and students in the pilot project will be involved in the activities. This process will be monitored by specialists from the Ministry of Education /Dept. of Environment. Recorded interviews and minuted responses 4.2 Videos filmed during pilot projects in autumn of 2020, with edited results produced before workshops 4.3 Training for hands-on activities and out-of-classroom field trips are taught as part of capacity-building workshops conducted for teachers, NGO volunteers, park educators, etc., who will help implement the educational program. This process will be monitored by specialists from the Ministry of Education /Dept. of Environment.	COVID-19 conditions allow for hands-on activities to take place during the implementation timeline Local educators and scientists are able to consult in the creation of the activities. Financial resources are available to provide necessary equipment (e.g. microscopes for examination of specimens), as well as for organizational capacity to carry out field trips to view local ecosystems.
Output 5 Capacity of local educators is built to teach the *Coastal Education Guide* into their classrooms.	5.1 Logistics for a capacity-building workshop completed in advance of workshops 5.2 Pertinent educators participate in capacity-building workshops 90% of	5.1 Necessary logistics for six 3-day capacity-building workshops will be recorded in a spreadsheet, with corresponding dates and tasks listed along with dates of completion.	COVID-19 conditions allow for physical workshops to take place in allotted timing Appropriate venues and times are located in which to conduct the six

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	teachers (26 public schools and 22 private) respond. 5.3 Teachers are able to successfully conduct lessons in their classrooms using the education guide and resources by beginning of 2021/22 school year.	5.2 Attendance sheets from six 3-day capacity-building workshops on implementation of curriculum; process overseen by and carried out in association specialists from the Ministry of Education; training evaluation sheets. 5.3 M&E conducted partly through monitoring of the interactive website use by teachers and students, as well as from in-classroom visits and surveys conducted by project leaders to make sure curriculum is being implemented correctly. Ministry of Education will aid in monitoring / ensuring that the curriculum is implemented in all Year 5 & 6 classes, at both public and private schools.	separate 3-day capacity building workshops. Teachers are able to take the time to attend the workshops. Ministry of Education for the Cayman Islands is able to help plan the logistics of the workshops. Website will be functional and able to both aid in the trainings and be used as a tool to conduct M&E of the program. Project coordinators are able to visit classrooms in order to conduct assessments and surveys as part of the M&E process.
Output 6 Expansion of the *Coastal Education Guide* into the classrooms and education systems of other five Caribbean UKOTs with similar coastal ecosystems.	6.1 Copies of the *Coastal Education Guide* tailored to the ecology of each of the UKOTs with similar coastal ecosystems are developed by the end of the second year 6.2 Teachers in UKOTs trained on implementation of the *Coastal Education Guide* for each OT through capacity-building workshops over Y1 Q4 – Y3 Q4. 6.3 Students from other UKOTs engaged in curriculum taught using the *Coastal Education Guide* 6.4 Appointment of local coordinator for each additional UKOT in which the guide will be implemented	6.1 Records of experts, teachers, organisations consulted in creation of guide. Sufficient copies of the Guide are distributied for use in other UKOTs. 6.2 Five 3-day capacity-building workshops carried out in association with OT's Departments of Education; training evaluation sheets; workshop agenda and attendance sheets, class discussions etc. 6.3 Students interact with the website supplement of Education Guide. School records, video recordings, data postings 6.4 Written confirmation or a contract/MOU that will verify the	COVID-19 conditions allow for schools to implement in accordance with project timeline and international travel to various OTs Educators will use the *Coastal Education Guide* as a tool in educating their students on the local coastal ecology of the different islands. The *Coastal Education Guide* is completely integrated with Key Stages 1, 2 and 3 of the Science, Social Studies and Arts sections of the islands' Primary School Curricula. Local coordinator will monitor and evaluate the implementation and

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	6.5 Ongoing evaluation of effectiveness of Coastal Education Guide on teachers and students	specified person as the local coordinator for the specific UKOT 6.5 Follow-up classroom visits to determine if Education Guide is correctly implemented; ongoing assessments, questionnaires for teachers and students, recorded and documented class discussions.	effectiveness of the guide for their specified UKOT. Additional funding will be located to assist in covering finances for expansion to other UKOTs in the Caribbean.
Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)			

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	X
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.	
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.	X
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.	
Have you involved your partners in preparation of the report and named the main contributors	X
Have you completed the Project Expenditure table fully?	X
Do not include claim forms or other communications with this report.	