

## Darwin Initiative Main Annual Report

To be completed with reference to the “Writing a Darwin/IWT Report” Information Note:  
(<https://www.darwininitiative.org.uk/resources-for-projects/reporting-forms-change-request-forms-and-terms-and-conditions/>).

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

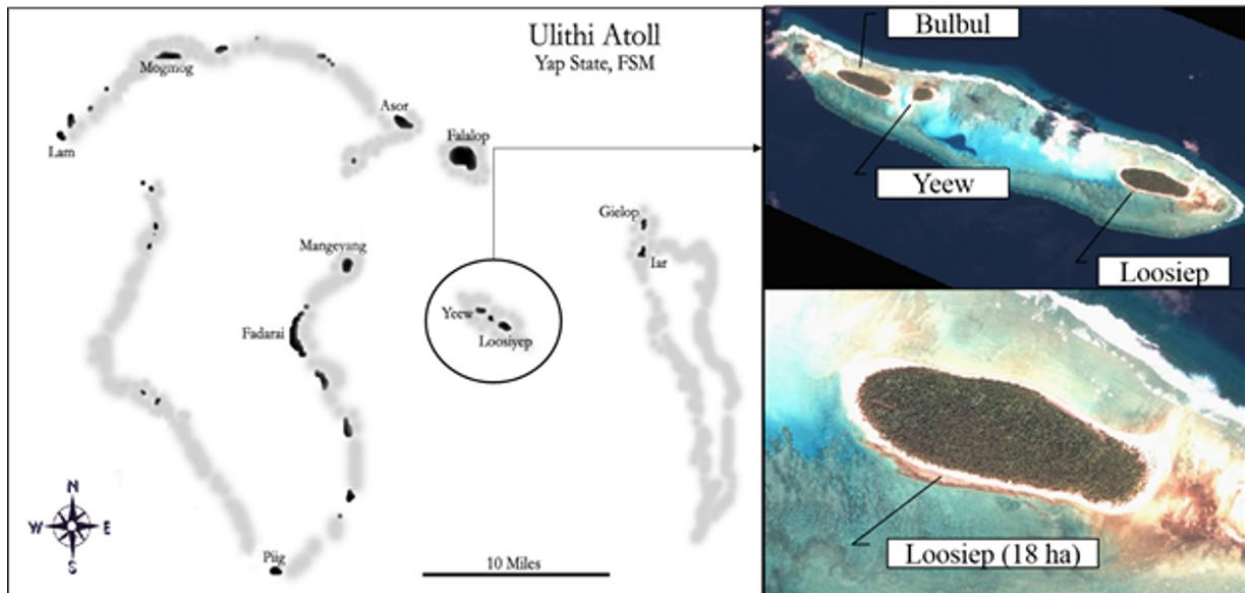
**Submission Deadline: 30<sup>th</sup> April 2021**

### Darwin Project Information

Project reference	25-007
Project title	Protecting Yap’s Biodiversity and Livelihoods through Invasive Alien Species Removal
Country/ies	Federated States of Micronesia
Lead organisation	Island Conservation
Partner institution(s)	Ulithi Falalop Community Action Program; One People One Reef
Darwin grant value	£350,000.00
Start/end dates of project	7/1/2018 - 3/31/2022
Reporting period (e.g., Apr 2020 – Mar 2021) and number (e.g., Annual Report 1, 2, 3)	April 2020 – March 2021, Annual Report 3
Project Leader name	Tommy Hall
Project website/blog/social media	<a href="http://www.islandconservation.org">www.islandconservation.org</a> <a href="http://www.onepeopleonereef.org">www.onepeopleonereef.org</a>
Report author(s) and date	Tommy Hall (IC), Madeleine Pott (IC) Nicole Crane (OPOR), John Rulmal JR (UFCAP), April 30, 2021

### 1. Project summary

Ulithi is a remote atoll in the Caroline Islands of the western Pacific Ocean consisting of 40 islets. Ulithi supports some of the greatest biological diversity within the Federated States of Micronesia (FSM), and is home to regionally important native seabird species, the endemic giant Micronesian gecko and a newly discovered endemic blind snake. Known as the “Turtle Islands,” Ulithi provides nesting habitat for the greatest number of Green Sea Turtles (EN) in Micronesia. Three introduced and invasive species, the black rat, feral pigs and the mangrove monitor lizard, are present on Loosiep, one of the Turtle Islands. There they are impeding horticulture, diminishing critical natural resources, and having a significant impact on the island’s biodiversity. Damage from pigs and monitor lizards is illustrated by the excavation and predation of green turtle nests, the lack of roosting and nesting seabirds on Loosiep and the absence of coconut crabs which are abundant on surrounding islands. Rats are equally destructive, preying on marine turtle hatchlings, seabirds and crops.



**Figure 1.** Map of Ulithi Atoll and Loosiep Island.

Because of the atoll's extreme isolation, Ulithi's 1,000 residents rely heavily on the natural resources available to them such as food grown in gardens and the sustainable harvest of turtle and bird eggs. Rats, pigs, and monitor lizards have depleted these resources on Loosiep. Monitor lizards frighten the community due to their large size and fearsome appearance. Consequently, gardening on Loosiep has been abandoned. Freshly grown foods are no longer readily available, and the community is faced with a serious dietary-related disease epidemic. These impacts have reduced the community's resilience at an especially vulnerable time in the face of increasingly severe storms and rising sea levels due to climate change. The COVID-19 pandemic has exacerbated this as the community has been forced to become more self-reliant as a result of supply chain disruptions that have impeded the transport of food to the islands.

Ulithi's subsistence economy is closely integrated with nature and the community has a strong interest in relying on its natural resources, particularly in the wake of COVID-19. To uphold these traditional values, the integrity of the atoll's living ecosystem must be maintained. Eradication of harmful invasive vertebrates will allow recovery of native species populations and enable the community to preserve its cultural values. The goal of this project is to remove invasive rats, pigs, and monitor lizards and facilitate a transition back to a traditional subsistence lifestyle for the inhabitants of Ulithi. Once the turtle islands are free from these invasive vertebrates, the community will re-establish traditional gardening practices on the island while also being stewards for the recovery of the ecosystem on the island, the sea turtle population, and the surrounding reefs.

## 2. Project partnerships

There are two lead partners that support Island Conservation on this project: Ulithi Falalop Community Action Program (UFCAP) and One People One Reef (OPOR). UFCAP represents leadership and the community of Ulithi and are the primary partner on the project. UFCAP's role in the project is to engage community leaders, advise on planning and logistics and facilitate community involvement in all phases of the project. OPOR's role in the project is to lead the socio-economic monitoring and community engagement and outreach. OPOR is working closely alongside UFCAP to facilitate strong community relations and involvement of local scientists. The fourth partner, Blue Ecology, is involved in engaging the youth of the community in this project.

Due to the COVID-19 pandemic, all field work or in-person work was delayed in 2020 and, unfortunately, has been delayed again until 2022. This has directly impacted each partner's ability to progress their objectives for this and many other projects currently ongoing on Ulithi. The remoteness of Ulithi and lack of telephone or internet access became a real challenge at

times. There were several periods where the regular flights were canceled due to lack of fuel in Yap, essentially cutting Ulithi off from the rest of the world entirely. Despite the delays and the continued challenges in communication and engagement, the project partnership has remained strong in its third year. We have kept in regular contact and sought to collaboratively maintain project momentum. However, all partners have had to make significant changes to project spending in order to conserve funds for the time when travel opens back up and we can resume operations at full capacity.

Despite the setback posed by of the pandemic, we were able to achieve some actions that are critical to keeping momentum and positioning the partnership for a 2022 removal of invasive species as follows:

- We have maintained strong communications with our lead point of contact for UFCAP, John Rulmal, who stationed himself in Guam for the duration of pandemic. Reliable connectivity in Guam allowed us to maintain a reliable flow of information between partners and the outer island community.
- We used the break from field work to evaluate the larger programmatic goals of the partners that we hope to achieve as a follow-on to this project. This included horizon scanning exercises for the next set of islands in Ulithi Atoll and larger scale eradication projects that incorporate larger agriculture and permaculture programs.
- OPOR held regular virtual meetings with the leaders, community, and youth of Ulithi who happened to be in Yap or elsewhere with internet access. Our project was a regular topic and we discussed promoted the awareness of invasive species and biodiversity.
- Island Conservation held a large and well-produced webinar series where one session featured the Ulithi Project, the community, and how their traditional conservation methods align with the work the partnership is conducting. Both UFCAP and OPOR presented in the webinar, which received positive feedback from supporters, donors, collaborators, and students in attendance.
- We reached an agreement with UFCAP for the community to use the resources originally purchased for the project (bulk food for field camp, 15 drums of boat fuel, satellite phones and building materials). They intend to replace the fuel as needed for the project when we return to the field in late 2021 or 2022.

### **3. Project progress**

#### **3.1 Progress in carrying out project Activities**

The first output is focused on the removal of invasive species from Loosiep to make the five turtle islands rat free and implementing biosecurity. In year 3, we were unable to progress the rat and monitor lizard eradication components of the project, however we were able to revise and refine the operational plans for the rat and monitor lizard operations. Due to the travel restrictions in place and a concern over introducing the coronavirus to a remote atoll with limited medical resources, we could not complete the rollout of the biosecurity program which involved a series of trainings and workshops with communities on each of the inhabited islands. We circulated a set of biosecurity recommendations and next steps, but we were not able to receive any feedback due to communications challenges. We will resume the planned implementation of the biosecurity program once travel to Ulithi opens again.

The second output is the recovery of native biodiversity on Loosiep. Although rats and monitors have yet to be removed, the Ulithi eradication team was able to remove the last of the feral pigs from Loosiep in 2020. With pigs gone, we can assume that turtle nests in the past year have had a much higher success rate. We can also expect that much of the native atoll forest on Loosiep will begin to recover from the impacts of pigs rooting. The follow-on impacts of removing pigs will benefit invertebrates and reptiles, but rodents and monitor lizards still must be removed to realize maximum benefits. In 2020, the field team was able to travel to Loosiep two times to complete seabird surveys which helped to strengthen the pre-eradication baseline data.

Output three is the increased availability of natural resources and increased crop production after food gardens are established on Loosiep. Activities related to baseline data collection and development of plans for the food gardens were all completed on schedule in 2019. No specific activities related to the post-eradication monitoring of natural resources availability or initiating agricultural gardens could be implemented as the eradication has yet to begin.

Developing community capacity, Output four, has been a substantial and important component of this project. Many of the activities focused on capacity building were completed or initiated in 2019. During the COVID-19 pandemic, the community and leadership on Ulithi increased capacity to adaptively manage eradication projects. The project partnership, along with the Council of 10, evaluated the option of implementing the rat eradication with remote management from Island Conservation. However, given that the team has yet to complete a rodent eradication project, they decided it is imperative that the first project of its kind in Ulithi have the highest likelihood of success in order to progress with future eradication projects. Several of the local field team members relocated to Yap or Guam during the pandemic where they had access to the internet and could join calls with UFCAP, OPOR and IC.

The final output of establishing a period of employment for local community members was delayed due to the pandemic. The field team completed a minimum of necessary activities over the course of the year. They travelled to Loosiep on several different occasions to maintain the field camp structure and trail network, manage the network of camera traps, and conduct baseline seabird surveys. When the field work resumes in 2022, we expect the field and support teams to be back at full capacity.

### **3.2 Progress towards project Outputs**

Due to the forced project delay in 2020, our ability to make progress towards any of our project outputs was extremely limited. In early 2021 the partnership formally decided to further postpone all travel and field work in Ulithi until 2022. Assuming the Darwin Initiative accepts our request for an additional one-year delay, we anticipate achieving project outputs by the close of the project. If there are outputs that have not been achieved by the end of the funding period, IC and the partners will continue to raise funds to support the completion of these outputs.

Output one addresses the removal of invasive vertebrates and establishing biosecurity. Throughout 2020, the project partnership and the field team remained optimistic that invasive species removal could be feasible in 2021. While the additional delay was a disappointment, there is still enthusiasm amongst partners and within the community to see Loosiep restored. In 2020, we made several recommendations to the Ulithi community for biosecurity and submitted a concise set of recommendations to UFCAP. The Darwin Initiative's support for this Project is leveraging increased community and national awareness of invasive vertebrates and the impact they have on terrestrial and marine environments well beyond the scope of just this project. Our partners UFCAP and OPOR are working together on a separate project with Yap State to develop a manual to establish Protected Area Network (PAN) sites within the islands; one of the manual chapters focuses on invasive species management, awareness, and biosecurity.

The second output the project will achieve is the recovery of native biodiversity on Loosiep Island. Progress towards this output is reliant on the removal of invasive vertebrates. With the pig removal completed in 2020, we can anticipate some benefit to the native ecosystem on Loosiep Island. No further action was taken to remove invasive vertebrates in year 3, therefore we cannot report on any additional recovery at this time.

Improving food security was identified as a major priority by the Ulithi community during the COVID-19 pandemic. Output three focuses on increasing availability of natural resources and better crop production. Our project proposes to achieve this by first removing invasive vertebrates. Therefore, we cannot report on any increases due to the delay in project activities resulting from the COVID-19 crisis.

Our community engagement lead for the project, OPOR, continued to include women and youth in online workshops which included developing communication and outreach ideas

around invasive species management and biosecurity practices. These fall into output four of this project, which aims to develop community capacity. In year two, we made impressive advances in the community capacity to plan and prepare for an eradication project, however we fell short of an implementation due to the COVID-19 pandemic and global shutdown. The partnership managed to maintain motivation and momentum in the project, but there were no real advances in increasing local capacity. We continue to have confidence in the ability of the partnership and the community to see this project through to success once field work resumes. Output five is in alignment with output four; the project team remains on standby and are ready to mobilize once work resumes.

### 3.3 Progress towards the project Outcome

**Outcome:** Removal of harmful invasive species will result in native and endemic species recovery and improved conditions for horticulture, resulting in increased food security for the community.

The advent of the COVID-19 pandemic and associated travel restrictions have been a huge impediment to achieving our outcome. We were unable to make meaningful progress toward the project outcome in year three. In April 2020, we were optimistic that we would manage the pandemic's impacts on the project, and we were prepared for a 2021 implementation. However, the partnership and the community determined that the project should be delayed an additional year, until 2022. The community and the project partnership remain enthusiastic and committed to the project and we aim to achieve the project outcome by the end of the funding (assuming our request for a delay is granted). However, we have already communicated to the Darwin Initiative that we expect the monitor lizard work to require an additional 3-5 years of effort to complete. We are actively searching for funds to conduct monitor lizard removals beyond the scope of this project to achieve a successful outcome and support future similar efforts in Ulithi and the outer islands of Yap.

### 3.4 Monitoring of assumptions

Assumption 1: No extreme or unusual conditions nor significant crisis (i.e., COVID-19 pandemic) will inhibit further progress.

Comments: We will continue to work with local partners and use the best available information to plan our work in Ulithi. The global pandemic was and is an underlying risk that cannot be anticipated. Although we assume such events will not occur, we are prepared to deal with unforeseen situations by working with partners to adaptively manage risks.

Assumption 2: Enabling conditions to complete the project are in place for the duration of the project (e.g., access to Ulithi atoll, operable boats, local field team available, permission and mandate from local community remains in place).

Comments: We cannot assume that enabling conditions will always be fully in place for the life of the project. Weather will always pose a risk of hampering our progress in Ulithi, as it does on all island projects in the tropical Pacific. Unplanned events such as fuel shortages, serious illness, or the death of a community member can cause significant resources to be withdrawn from the project, including boats, field team members, or even access to Loosiep itself. For example, if a chief of high enough prestige passes away, access to certain areas under their jurisdiction may be closed for lengthy periods of time (multiple years) as a part of traditional mourning and resource management. In the case of the COVID-19, the traditional leaders of Ulithi decided that access to Ulithi would be restricted to safeguard the health of the community, a goal shared by all partners—no matter how disruptive it is—to ongoing projects. However, due to the high level of trust and dedication from our partners, we can mitigate the impacts when enabling conditions are not fully present. A high level of empathy amongst our partners and the capacity to adaptively manage obstructive developments to the project are two hallmarks of this partnership that will ensure we achieve our desired outcome.

Assumption 3: Rats on Loosiep are susceptible to the same bait and baiting methods that are used on similar tropical islands in the Pacific Ocean.

Comments: Based on the results of our bait trial in April 2019 and IC's experience in successfully completing rodent eradications around the world, we hold to the assumption that Rats on Loosiep are susceptible to the same bait and baiting methods that are used on similar tropical islands in the Pacific Ocean.

Assumption 4: The tools and methods available for the monitor lizard eradication will be effective in detecting and removing the last individual.

Comments: As of the drafting of this document, we have not succeeded in reliably detecting or trapping juvenile monitor lizards; nor in finding an active monitor lizard nest. The partnership is still actively researching methods and striving to be innovative in how we address monitor lizards in the juvenile age class. Concerning location of monitor lizard nests, we have strong interest in utilizing detection dogs to reach this end. Our current level of funding cannot support detection dogs, however, and the partnership will need to invest more time in securing significant additional funds for this conservation tool.

Assumption 5: Existing programs to monitor coral reef and green sea turtle nesting on Loosiep will continue for the foreseeable future.

Comments: This assumes OPOR will continue to have access to funds for their marine work, and there will be interest and motivation from the community to carry on with turtle monitoring.

Assumption 6: Trained persons remain engaged and motivated to pursue further work in conservation projects when opportunities are available.

Comments: With a two-year delay in field work, we cannot assume that the team trained in 2019 will be available in 2022. However, we are prepared to take on new team members and bring them up to speed. Based on our experiences with field work and community engagement across Ulithi atoll, we are confident in the assumption that trained persons will remain engaged and motivated to pursue further work in conservation projects when opportunities are available. To this end, the positive reception of the Ulithi community to the work currently under way has generated enthusiasm for more widespread eradication efforts across Ulithi that exceeded our expectations. We are reassured that previously trained team members can integrate field workers and train them to become experienced and motivated eradication practitioners, thus creating a positive feedback loop where the project can adapt to the loss of skilled team members.

Assumption 8: The Council of Chiefs agrees with the proposed methods for the project. Based on the scoping trip completed in March 2017, trial work in 2019 and a letter of support received for the project, preliminary support is in place from local community leaders.

Comments: As of the drafting of this document we strongly believe this assumption holds true. Our discussions with partners and the council of chiefs since the beginning of the COVID-19 pandemic have continued to inspire confidence in their commitment to the project and the anticipated outcomes.

Assumption 9: FSM Government has the capacity to task someone to participate in part of the project's implementation.

Comments: There is continued interest from the FSM and Yap State governments to build capacity to protect and restore their island ecosystems and natural resources through the removal of invasive species. Biosecurity also remains a priority for Ulithi and other outer islands.

Assumption 10: The monitor lizard eradication can be achieved through attrition; however, it may take three or more years of consistent effort to achieve.

Comments: As of the drafting of this document we believe this assumption holds true.

### **3.5 Impact: achievement of positive impact on biodiversity and poverty alleviation**

Our expected outcome is that the removal of harmful invasive species will result in native and endemic species recovery and improved conditions for horticulture, resulting in increased food

security for the community. Due to the COVID-19 situation, our project was not able to achieve significant positive progress to increase the wellbeing of the community or have a positive impact on biodiversity in year three. However, the removal of feral pigs in 2020 will contribute towards some ecosystem recovery. We expect peak the 2021 turtle nesting season (May-July) to be the most successful in years.

Unfortunately, we have been forced to delay an additional year but, we remain confident we will make great progress and a positive impact when work resumes in late 2021 and 2022. It is worth noting that the effects of the COVID-19 crisis on the Ulithi community have strengthened their desire to improve their food security and increase natural resources. Partnership meetings over the course of 2020 have often led to strategic discussions for how to develop and fund a broader program of work to restore terrestrial and marine ecosystems through invasive species eradication.

#### **4. Contribution to the Global Goals for Sustainable Development (SDGs)**

This project is still in the early implementation stage and due to the unanticipated delay resulting from COVID-19, has not progressed as planned. Therefore, many of the anticipated contributions of this work to Global Sustainable Development goals have yet to be realized. Upon its completion, this project will support the United Nation's Global Goals for Sustainable Development, contributing to meeting the following:

Both the overarching goal of 15 to: *sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss*. This project will also support the more specific target 15.8: to *introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species*. The project will do this by removing invasive rats, feral pigs and monitor lizards from Loosiep and introducing measures to prevent their reintroduction, and by building capacity for future invasive species management in FSM. The completion of baseline monitoring in 2019 will allow us to measure progress towards these goals.

The overarching Goal 2 to *End hunger, achieve food security and improved nutrition and promote sustainable agriculture*. This project will also support the more specific target 2.4 *By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality*. Establishing food gardens on Loosiep will not only provide a regular food source for the community, but the traditional agroforest approach to sustainable gardening will allow the ecosystem to recover. The surveys of terrestrial resources and the community food garden calendars survey provide a baseline to measure the change over time and demonstrate progress towards this goal.

The Federated States of Micronesia Strategic Development Plan (2004-2023) identifies invasive species as a key threat to FSM's environment and sustainable development. One of the strategies identified in the Plan is to *establish effective biosecurity (border control, quarantine and eradication) programs to effectively protect the FSM's biodiversity from impacts of alien invasive species*. Although our project aims to achieve this on a local scale, because the knowledge and skills are transferable, it is anticipated that the project will catalyse better border protection for Ulithi and potentially other islands within FSM. In other regions of the world where these conservation strategies have been implemented, the positive impacts on local biodiversity and native species are measurable and long lasting. We look forward to reporting progress towards these goals in the coming years of this project.

The Yap Biodiversity Strategy and Action Plan was endorsed by the Governor in January 2019. The plan specifically identifies biodiversity, addressing invasive species, capacity building, stewardship programs and environmentally sustainable industries. This project focuses on all of these, as demonstrated in this report. The plan specifically identifies Ulithi and recommends the turtle islands would benefit from a serial World Heritage Status.

## 5. Project support to the Conventions, Treaties or Agreements

COVID-19 has forced us to delay all major project activities. As such, there is nothing new to report on project support of conventions, treaties, or agreements. We are in the implementation stage of this project and our aim to achieve biodiversity convention goals remains in progress as described below. In the current phase of this project, we are still actively seeking interactions with local and UK convention focal points. We have been in touch with the FSM focal point for the GEF project and are hoping to collaborate as appropriate. They are interested in the implementation of the rat eradication. We had planned to invite them to participate in 2021; however, due to the second delay we now plan to invite them when we resume work in 2022.

This project will address the following CBD Aichi Targets, and the project will help the FSM meet its objectives under the Convention on Biological Diversity and the related Micronesia Challenge:

*Target 9*<sup>[1]</sup> - Through this work two invasive vertebrates (rats and monitor lizards) listed among the world's worst invasive alien species by the IUCN Invasive Species Specialist Group will be removed from the island of Loosiep and protocols to prevent their reinvasion will be developed. We have also added to this eradication project the removal of pigs from Loosiep Island.

*Target 12*<sup>[2]</sup> - The removal of invasive vertebrates will address a key threat to green sea turtles in Micronesia and help stem the declining population trend for this endangered species. The project will provide greater security from extinction for species found only on Ulithi such as the Ulithi blind snake.

*Target 14*<sup>[3]</sup> - This project will address concerns over essential resources related to the livelihoods and well-being of local populations. This project is designed to restore Loosiep island, safeguard essential terrestrial food resources, and reduce pressure on the food resources of adjacent islands.

*Target 15*<sup>[4]</sup> - The impacts of invasive species, although localized, have reduced the community's resilience at an especially vulnerable time in the face of increasingly frequent and severe storms and rising sea levels resulting from climate change. This project will contribute to both ecosystem resilience and community resilience through increased food security. Further, this project has already begun to catalyze future eradications within Ulithi that will serve to augment resilience.

*Target 17*<sup>[5]</sup> - FSM prepared a National Biodiversity Strategy and Action Plan (NBSAP) in March 2002 to fulfil its obligations to the Convention. A Yap State Biodiversity Strategy and Action Plan (YBSAP) was also developed. Both plans identify invasive species as a major threat and constraint to biodiversity conservation in the FSM. The YBSAP also identifies invasive species as a threat to Yap's natural communities, economy and way of life and specifically identifies rat control and public awareness as priorities. Within the NBSAP, a Strategy and Action Plan was derived. This project advances the following overarching goals identified within this Action Plan:

*Theme 4. Agrobiodiversity:* The conservation and sustainable use of Agrobiodiversity contributes to the nation's development and the future food security of the FSM.

*Theme 6. Biosecurity:* Border control, quarantine and eradication programs are effectively protecting the FSM's native biodiversity from impacts of alien invasive species.

*Theme 9.* Traditional resource owners and communities are fully involved in the protection, conservation, preservation, and sustainable use of the nation's biodiversity.

This project will enable FSM to advance these goals by removing three invasive species from an area within FSM. It will raise local awareness of the threat of invasive species and the importance of biosecurity, and it will develop capacity that can be used elsewhere within FSM to advance implementation of its NBSAP.

*Target 18*<sup>[6]</sup> - For thousands of years, Ulithi's natural resources were effectively controlled through traditional management. However, like many other small island communities, this traditional management was abandoned over the last century, resulting in the decline of turtles, fish and other crucial marine resources. Traditional management has now been reimplemented and has proven to be effective. However, invasive species have interrupted the community's ability to manage their natural resources. Removing these invasive species will restore balance



on Loosiep and enable traditional management by the local community for the conservation of biodiversity and sustainable use of terrestrial and marine resources.

Biodiversity target references: It should be noted that due to the COVID-19 pandemic, the project will not meet objectives on our originally expected timeline.

[1] Aichi Biodiversity Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

<https://www.cbd.int/sp/targets/default.shtml>

[2] Aichi Biodiversity Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

[3] Aichi Biodiversity Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

[4] Aichi Biodiversity Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

[5] Aichi Biodiversity Target 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

[6] Aichi Biodiversity Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

## 6. Project support to poverty alleviation

\*\*Note that we have altered the concept of 'poverty alleviation' to 'promoting wellbeing'. It has become clear to us as we progress in this work that the people of the outer islands and Ulithi in particular do not consider themselves 'poor', and that concept has connotations that are not conducive to helping people with (western) perceived poverty and gender equity issues. However, they do articulate what it means to them to feel secure, including food, environmental, and social security. Thus, we have modified the concept of 'poverty alleviation' to 'promoting wellbeing' as articulated by the community.

The wellbeing survey is being led by One People One Reef, and we have contracted social scientists to develop the instruments and lead the analysis. Due to the pandemic, the wellbeing survey saw lower participation than we had initially hoped for. We have received surveys from 35 families on Mog Mog (considered a complete sample) and a combination of 38 families from the remaining 4 islands (we are still evaluating if we can use these as individual islands or to lump them due to the smaller size. Both have analysis implications). With a total of 73 completed surveys, we have completed an initial analysis. With colleagues Supin Wongbusarakum and Noelle Oldiais, we ran descriptive and multiple response analyses for both Mog Mog, and the other islands, using SPSS software. We are getting a very interesting look into food security, wellbeing, and importance of gardens, and are excited to further analyse the responses. While we did not get full participation from all islands, we are confident that we have enough data to formulate focus group and interview questions for when we are able to return to the site.

## 7. Consideration of gender equality issues

All the partners are working to include more women and girls in youth and outreach activities. The OPOR team has been making regular posts on their Facebook site which reaches close to

1,000 people, many of whom are from the Yap outer islands. Some of these posts are specific to women and their roles and have reached out to girls and young women for the youth meetings. Most of the interviewing and translations for the OPOR storytelling project was done by women and girls.

## **8. Monitoring and evaluation**

The logical framework continues to be the primary tool to evaluate real project progress. The log frame, especially the activity list, serves as a checklist of deliverables. It is important to note that the benefits of eradication projects are longer-term than the scope of this grant and project. Assuming the project remains sustainable for the long-term, the impact will continue to expand for many years. The methods and the baseline data developed for this project allow for the evaluation of the long-term impact, at any point in the future. The measurable indicators established at the onset of the project are still relevant. In early 2020, prior to the COVID-19 related delay, the project went through an internal readiness check for the rodent eradication, the results of that review are included with this report.

## **9. Lessons learnt**

The biggest lesson or takeaway from the previous year is that it is important to establish contingency plans for unexpected delays to the project by one or more years. Island Conservation has a standardized practice of completing checks prior to committing major resources to a project. Now, contingency for longer term delays is an integral part of those reviews. Although we, unfortunately, committed significant project resources into the 2020 implementation that was eventually delayed, it quickly became apparent the strength of the partnership was critical to maintaining momentum and local commitment to the project.

It was fortunate that our lead point of contact for the community and UFCAP relocated to Guam early during the pandemic. This allowed us to maintain regular contact and some engagement directly with the island. We also left a satellite phone on Ulithi which was critical to maintaining communications over the past year. We would recommend to anyone planning work with a remote community to plan on alternate means of communication in the event of unexpected and long-term delays.

## **10. Actions taken in response to previous reviews (if applicable)**

The annual report review was referenced in the writing of this report and information has been provided as requested.

## **11. Other comments on progress not covered elsewhere**

It was noted in the annual plan review that an exit strategy should be laid out, detailing handover to the community and local organizations. This has been noted and communicated to the project partners and Ulithi leadership. However, as with the biosecurity planning, the Ulithi Council of 10 would prefer to develop this in a traditional meeting scenario, where process can be suggested and decided upon unanimously as opposed to Island Conservation telling them what should happen. Island Conservation intends to develop and facilitate an exit strategy and continue to support Ulithi and other outer island communities for this and future projects. The finalization of the biosecurity plan and exit strategy are prioritized for the next site visit and will be completed before the implementation of the eradication operations.

### OPOR Storytelling Project

OPOR has also continued with outreach to the youth via the **storytelling project** (with additional funding from a separate source) to capture important stories from community elders. May Roberts, Travis Trinh and John Rulmal have been holding regular meetings via zoom with the youth (and some older participants) from Ulithi who have access to internet. At these meetings, the discussions have centred around best practices in management, important traditional stories, and youth engagement and leadership. This regular interaction has been

important to maintaining connection and outreach in the absence of physical connection. The storytelling project can be found on the OPOR Website:

<https://onepeopleonereefstorytellingproject.org/>

#### Mapping:

We have printed high-definition maps of Asor, Mog Mog, Federai and Loosiep from our aerial drone surveys. Those maps have been sent to Guam and are awaiting travel to the outer islands.

#### Reef Surveys

OPOR have strengthened our collaboration with the University of Rhode Island (URI) and the Keck institute at the Claremont McKenna Schools for work with isotopes. We have compiled a database of all samples and a subset of samples has been sent to URI. An initial analysis of bulk isotopes has been completed and we are developing a sampling design for compound specific isotopes. We hope to demonstrate a change in the source of nitrogen on the reefs surrounding Loosiep after invasive vertebrates are removed and seabirds return.

### **12. Sustainability and legacy**

The project still plans to include representation from Yap State in the implementation phase. In December 2019, there were simultaneous outbreaks of dengue fever and leptospirosis in Yap state, and the governor declared a state of emergency. Rats are vectors for leptospirosis and in some cases may support mosquito populations. As a result, there has been an increased interest in the rat eradication on Ulithi. The community outreach component of this project led to an increase in interest to eradicate rats both from the inhabited islands and other uninhabited garden islands. Specifically, there is a desire to increase productivity of traditional agricultural practices. Due to the COVID-19 crisis, the supply chain to Ulithi (and Yap) has been significantly impacted, further increasing the community's desire to improve agriculture and natural resource management and reduce their reliance on the 'outside world'. The partnership plans to develop a programmatic rat eradication strategy for Ulithi Atoll which will largely be a community led effort, utilizing the capacity developed from this project.

### **13. Darwin identity**

Island Conservation has created a website that highlights Loosiep Island and Ulithi Atoll. The Darwin Logo is proudly displayed as the first supporter of the project. The site can be found here: [Ulithi Atoll, Loosiep Island](#). At the bottom of the page are several blog posts related to the project. Unfortunately, there has not been much to report on other than the delay due to COVID-19.

### **14. Impact of COVID-19 on project delivery**

The outer islands of Yap are remote, and are serviced twice weekly by a small plane, one state ship, one national ship, and occasional visitors by boat. There are no hospitals and limited nurses and medical supplies. Therefore, it has been critical to isolate the people of the outer islands from potential sources of infection (there are a significant number of people who also have high-risk underlying health conditions, such as diabetes). As a result, we have been unable to travel to the atoll since March 2020. It is still uncertain as to when we will again be able to engage in fieldwork, but we remain optimistic we can resume logistics planning and travel in late 2021. Communication has been difficult (there are only radios and a limited number of satellite phones in the islands). Collaborating has become challenging as we are no longer able to meet in person, and communication channels with our colleagues across the islands have been challenging.

### **15. Safeguarding**

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

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

Island Conservation has a safeguarding policy, as is required in the US. Our staff complete annual trainings on issues like harassment and sexual exploitation. Our staff are required to follow these policies. Any volunteer or subcontractor brought on to the project by IC must sign a contract explicitly agreeing to comply with the policy. Prior to starting field work, we discussed the policy with UFCAP and agreed upon measures to ensure the policy would be followed by the field team. Further, we established a clear line of communication in the event someone from the local field team or our own team violates the policy.

## 16. Project expenditure

**Table 1: Project expenditure during the reporting period (1 April 2020 – 31 March 2021)**

<b>Project spend (indicative) since last annual report</b>	<b>2020/21 Grant (£)</b>	<b>2020/21 Total Darwin Costs (£)</b>	<b>Variance %</b>	<b>Comments (please explain significant variances)</b>
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
<b>TOTAL</b>				

## Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
<p><b>Impact</b></p> <p>Recovery of native and endemic biodiversity and improved food security increases the community's resilience to climate change and inspires further action to restore and protect FSM's unique biodiversity.</p>		<p>The scope of the eradication work was expanded to the removal of all invasive vertebrates from the five turtle islands, this included adding the pig eradication from Loosiep. With pigs gone from the island, Loosiep will begin to see signs of recovery. The COVID-19 pandemic has increased the community's interest in restoring their island ecosystems and sustainable management of natural resources. The Community leaders are interested in a successful outcome to support future eradication restoration projects.</p>	
<p><b>Outcome</b></p> <p>Removal of harmful invasive species will result in native and endemic species recovery and improved conditions for horticulture, resulting in increased food security for the community.</p>	<p>0.1 No invasive vertebrates remain on Loosiep by the end of the project.</p> <p>0.2 Net increase in the number and diversity of seabirds present on Loosiep by the end of the project. Pre-eradication baseline measures collected to allow measurement of expected long-term population change (e.g., 5-10 years). See Output 2.1 for specific measures by taxa.</p> <p>0.3 Net increase in the amount of food crops grown and harvested on Loosiep by project end date. No food is currently grown on Loosiep. Gardening on the island resumes with 75% of the community having access to food grown on Loosiep by the end of the project. See Output 3 for additional specific measures.</p>	<p>With no further reports of pigs on the island, we assume that the eradication was a success. No further activities toward invasive vertebrate removals were completed. The field team travelled to the turtle islands to complete two additional rounds of baseline monitoring for seabirds. Agriculture has not yet resumed on Loosiep; however, the community has made several trips to harvest wild growing Wax Apples and coconuts for food. The team continues to remain ready to implement the eradication project in 2022 and will then have capacity for future projects.</p>	<p>The Covid 19 pandemic forced the project to halt major operations in 2020, and we were forced to continue the delay into 2021. This reduces expected progress and achievements. The partnership will continue to maintain communication with Ulithi to work together as much as possible. Ramp-up for the eradication work is expected to begin in earnest in No, 2021.</p> <p>The implementation of the rat and monitor lizard eradication projects will now go ahead in 2022. The gardens were planned to start after the rat removal and will also have to be delayed. The partnership is managing the situation adaptively.</p>

	04. Local and national capacity to plan, implement and monitor invasive species eradication and biosecurity programmes is raised for 10 people by the project end date as measured by a pre-and post-skills assessment. See Output 4 for additional specific measures.		
<b>Output 1.</b> Invasive vertebrates (rodents and monitor lizards) removed from Loosiep, with biosecurity in place to prevent reinvasion.	<p>1.1 No rats remain on Loosiep island by end of year 2.</p> <p>1.2 No monitor lizards remain on Loosiep island by project end date.</p> <p>1.3 Biosecurity protocols are in place prior to project implementation and followed by local island users.</p>	<p>(The rat eradication will be implemented in 2022. If the project is successful, the turtle islands will be declared rat free in March 2023.</p> <p>1.1 The monitor lizard eradication will resume in 2022. Evaluation of removal methods helped determined that the complete removal of monitor lizards from Loosiep will take 3-5 years. However, the population will likely be reduced to near undetectable levels after only the first year, resulting in significant benefit to the ecosystem and allowing the community to resume gardening.</p> <p>1.2 Biosecurity protocols are in place for all travel to the turtle islands. Community awareness of risks of incursions and the impacts of invasive species has increased significantly. Biosecurity recommendations have been given to UFCAP and the Council of 10.</p>	
Activity 1.1 Complete operational, monitoring and biosecurity planning for rat and monitor lizard eradication.		These plans have been completed based on results from 2019 field trials. Operational plans have been developed for the rat eradication and monitor lizard eradication separately. Operational plans were reviewed and updated, with particular focus on the monitor lizard methods.	We will review the plans and complete readiness checks with an internal peer review group in 2021 to ensure the most efficient approach is planned.
Activity 1.2 Work with project partners to complete planning for community education and outreach program.		The initial planning for this was completed in 2019. However, community engagement is a dynamic process and has been managed adaptively to address the needs of the community. Specifically, around the changes related to COVID19	The partnership will continue to work together remotely to update the community on the project. As preparations resume in late 2021, a plan for resuming community engagement will be developed.
Activity 1.3 Conduct community outreach on all communities of Ulithi to educate people about components of the project including: methods, impacts and benefits from the project, opportunities for involvement, and updates on project status. Outreach is designed for traditional leaders, schools and individual households. Note: Community engagement will be continued through the duration of the project life cycle.		The partners contact with the community as much as possible considering the challenges associated with COVID-19. Our primary point of contact with UFCAP was our liaison to exchange information on Ulithi.	Community outreach will continue, as much as is possible. When there is more clarity on when travel restrictions will be lifted, plans for a trip and further outreach will be established. Ideally in

		late 2021 in advance of ramping field work.
Activity 1.4 Conduct surveys to measure community interest and understanding of project.	In person workshops and focus groups were completed by OPOR a in 2018. A formal survey measuring indicators of wellbeing was developed and completed in 2019 and 2020.	Follow up surveys and working groups are planned at the end of year three to measure against baseline and evaluate interest in next steps. The final analysis of the wellbeing survey will be completed in 2021.
Activity 1.5 Complete field trials and methods development for rat and monitor lizard eradication project.	Standard pre-eradication trials were conducted for the rodent eradication. A series of methods development trials were completed for monitors lizards. The results of both trials were important components of developing the operational plans.	No further trials are required for the rat eradication. The monitor lizard eradication is considered a trial eradication, therefore additional methods and strategies will be evaluated.
Activity 1.6 Implement biosecurity program.	In progress. A biosecurity plan was developed for travel to the turtle islands, biosecurity workshops and trainings were completed with the field team and UFCAP.	A biosecurity plan for all of Ulithi will be developed in close collaboration with the Ulithi Community and leadership. Biosecurity workshops and trainings will be facilitated when travel to Ulithi resumes.
Activity 1.7 Implement eradication operation for rats.	Reviewed and updated plans. Project was delayed again in 2021 due to ongoing travel restrictions and at the request of the community.	Rat eradication operations scheduled for 2022.
Activity 1.8 Implement eradication operation for monitor lizards.	Operational plans were reviewed and updated. There was no active removal of monitor lizards in 2020.	Full scale implementation of monitor lizard eradication is now planned to begin in 2022.
Activity 1.9 Implement eradication operation for pigs and confirm success.	Pigs are no longer detected on Loosiep island. The project team has maintained a network of trail cameras in 2020.	The team will continue to monitor the island to increase confidence that pigs no longer remain on Loosiep.
Activity 1.9 Confirm success of rat eradication.	N/A	N/A
Activity 1.10 Complete monitoring to confirm success of monitor lizard eradication.	N/A	N/A
Activity 1.11 Complete operational reporting.	N/A	N/A

<p><b>Output 2.</b> Native biodiversity recovery on Loosiep Island.</p>	<p>2.1 By 2021, sea turtle nest predation by invasive vertebrates is eliminated (reduced from: 80-100% of nests predated currently to zero predated by project end).</p> <p>2.2 Monitor lizard and rat predation on seabirds is eliminated, allowing recruitment of seabirds within the next 5-10 years. Baseline measures of seabird diversity and abundance (e.g., red footed booby, black and brown noddy) are collected pre-eradication, methods can then be repeated at 5-10 years post eradication to measure recovery.</p> <p>2.3 A baseline pre-eradication habitat assessment for the blind snake is completed and can be repeated 5 years post-eradication.</p> <p>2.4 Local staff trained in monitoring protocols in year 1; Baseline surveys completed pre-eradication; post eradication survey completed 1 year after implementation.</p>	<p>2.1 With the completion of the pig eradication in 2020, nest predations will decrease significantly in 2020. With the removal of rats and the start of monitor lizard eradication in 2022 nest predations will decrease further.</p> <p>2.2 Baseline measures of abundance were collected in 2020. These formal surveys provide further evidence that no seabirds nest on Loosiep.</p> <p>2.3 The pre-eradication assessment of blind snake provided evidence that, out of all the turtle islands, Loosiep provides the largest and most robust habitat for the blind snake. However, the presence of invasive species is keeping the population down to near undetectable levels.</p> <p>2.4 Local staff were trained in completing monitoring protocols working with an Island Conservation biologist and a local biologist. In addition to the initial baseline the local team successfully conducted another survey on two islands, and there are plans in place for further surveys in 2021.</p>	
<p>Activity 2.1 Develop monitoring plans for marine turtles, seabirds, reptiles and terrestrial fauna.</p>	<p>Completed 2019. A separate plan was completed for turtles. Marine turtle work was not continued in 2020 due to covid and lack of funds.</p>	<p>Continue to adapt and update plans as needed.</p>	
<p>Activity 2.2 Complete baseline monitoring working with project partners and local field team; collate existing data.</p>	<p>Additional baseline monitoring data was collected in 2020.</p>	<p>Support local team remotely as they continue to collect monitoring data.</p>	
<p>Activity 2.3 Undertake operational monitoring of eradication and detection methods.</p>	<p>Detection methods of pigs, rats and monitor lizards was established. Eradication monitoring of pigs is ongoing. Eradication monitoring of rats and monitor lizards is delayed until 2022</p>	<p>Support monitoring to confirm pig eradication. Undertake eradication monitoring for rats and monitor lizards in 2022.</p>	
<p>Activity 2.4 Complete post eradication monitoring for marine turtles, seabirds, reptiles and terrestrial fauna.</p>	<p>N/A</p>	<p>N/A</p>	



Activity 2.5 Complete eradication and biodiversity monitoring reports.	N/A	N/A
<p><b>Output 3.</b> Increased availability of natural resources and better crop production results in improved food security and quality for the Ulithi community, increasing resilience to climate change.</p>	<p>3.1 Horticulture is resumed on Loosiep, with 5 gardens planted by end of year 2.</p> <p>3.2 The subsistence economy is strengthened by increased trade and sharing of resources between islands by end of year 3.</p> <p>3.3 75% of the community (750 individuals) have access to improved food variety and quantity, with an increase in the carbohydrate and nutrient-rich plant-based foods necessary for a healthy diet by end of year 3.</p> <p>3.4. Women are empowered to resume food production on Loosiep, with restoration of the island's food resources under the direction of women during year 2-3.</p>	<p>3.1 A plan to resume gardening was developed for 2020. However, due to the delay in removing rats and monitors, the garden plots won't be established until 2021.</p> <p>3.2 The increased activity on Loosiep has increased interest in utilizing it as a food island. Meetings with community and chiefs have led to requests for rat eradication projects from several other islands to benefit gardens.</p> <p>3.3 There is still no gardening on Loosiep, however the community recently harvested mountain apples from the island to supplement their food supplies. By the end of 2022 gardens will be in full operation and providing food to the community.</p> <p>3.4 Meetings with women have demonstrated that they are very excited by the opportunity to lead agricultural production on Loosiep and other islands in the atoll. Ultimately, they would like rats removed from their inhabited islands, greatly increasing productivity.</p>
Activity 3.1 Develop monitoring plan that outlines the protocols, instruments, and methods for measuring changes in natural resources available, agricultural productivity, and poverty alleviation as a result of removing invasive vertebrates from Loosiep.	Completed in 2019.	Continue to work with partners to adaptively manage monitoring plan.
Activity 3.2 Undertake baseline monitoring and collate all existing data on current food consumption, natural resource and agricultural productivity. This will include a Household Consumption survey completed by a subset of households in the beginning of grant term (August 2018).	Completed. Food garden calendar was completed in 2019. The indicators of wellbeing survey had a strong focus on the natural resources and their management. The analysis of the wellbeing survey was delayed, results were slow to come in due to COVID19.	Complete data analysis and report of wellbeing survey.
Activity 3.3 Develop plan to facilitate creation of new gardens on Loosiep Island.	Completed in 2020.	Review and revise plan as necessary.

Activity 3.4 New gardens are established on Loosiep Island.	To be established in 2022. After knockdown of monitor lizards and rats.	Work with partners and community to ensure logistics and resources are available.
Activity 3.5 In year two and year three, complete outcome monitoring of consumption of land-based food sources and establish enabling conditions for follow up monitoring and reporting.	No formal monitoring of land-based food sources was completed.	Plans are in place to implement the food garden calendar survey again, after gardens are established at the end of 2023
<p><b>Output 4.</b> Community capacity developed: The local community, Yap State, and National (Federated States of Micronesia) capability to plan and implement invasive species eradication and biosecurity projects is advanced.</p>	<p>4.1 At least 10 people from Ulithi are hired and trained in invasive species detection and removal methods in year one and apply their skills to the eradication on Loosiep in years 2 and 3 (now 2022 and 2023).</p> <p>4.2 The Council of Chiefs and landowners on Ulithi are involved in the planning, implementation and monitoring stages of the eradication throughout the duration of the project.</p> <p>4.3 At least 2 people from the Yap State government and 1 person from the FSM government participate in the eradication in year two.</p> <p>4.4. In year two, women participate in the operational teams. Girls participate in the youth groups, with a 50% male: female participation ratio.</p> <p>4.5 Community workshop is completed to highlight biosecurity risks and provide training on effective biosecurity that includes quarantine, surveillance and response.</p>	<p>4.1 The field team completed two more trips to Loosiep to search for pigs, complete bird monitoring, manage the network of camera traps, and maintain the trail network and field structure.</p> <p>4.2 The council of Chiefs was brought into the planning process at the onset of the project and continues to have the final say in all major project activities. A formal letter of support of the eradication and methods was provided by the Council of Ten. The Council of Ten has maintained the final authority over all project activities in the past year, including the decisions to delay the eradication project for a second year.</p> <p>4.3 Yap state is aware of the project delay and maintains interest in being involved when the project resumes in 2022.</p> <p>4.4 Women participated in island visits to harvest food and leading youth meetings. OPOR continues to reach out and engage specifically with women and youth. Including women of Ulithi will continue to be a priority when project work resumes.</p> <p>4.5 More community workshops and are planned in the future when project work resumes on Ulithi.</p>
Activity 4.1 Conduct workshop to engage key stakeholders in project planning, community outreach and monitoring.	Completed.	Continue to hold workshops, community meetings and focus groups to engage the community.
Activity 4.2 Build local project teams, incorporating the local women, girls, and youth.	Completed.	Maintain capacity with current project team. Focus on expanding opportunities to women (if they want) and youth.

Activity 4.3 Run training programme(s) for local project teams to conduct: biological surveys, community outreach, eradication operations and monitoring surveys.	Ongoing. Trainings have been completed; however, we expect some turnover in the field team, therefore we will repeat all necessary training efforts as needed.	Continue trainings and outreach through the life of the project.
Activity 4.4 Support field teams (combination of remote and on island) for duration of operation.	Ongoing. Strategies for remote communication with field team have been established.	Continue to support the field teams remotely until travel restrictions are lifted, and field work resumes to full capacity.
Activity 4.5 Engage key stakeholders in baseline and outcome monitoring.	Completed.	Key stakeholders are engaged in the project and it is expected they will remain engaged through the completion and on to the next project.
Activity 4.6 Maintain communication with the local community and help source funds for future work.	In progress	The project partnership is actively seeking funds for this project and future work in Ulithi.
<b>Output 5.</b> Period of employment is provided for local community representatives.	5.1 At least 10 local temporary employees are engaged as part of project implementation.	The community has been employed at multiple levels. Plans are in place for continued employment on the eradication project.
5.1 Recruit and employ 10 local temporary employees for project implementation.	There was a decrease in activity for the local team in year three. However, 10+ travelled to Loosiep to complete eradication or monitoring related field work.	

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<b>Impact</b> (Max 30 words): Recovery of native and endemic biodiversity and improved food security increases the community's resilience to climate change and inspires further action to restore and protect FSM's unique biodiversity.			
<b>Outcome:</b> (Max 30 words) Removal of harmful invasive species will result in native and endemic species recovery and improved conditions for horticulture,	0.1 No invasive vertebrates remain on Loosiep by the end of the project.  0.2 Net increase in the number and diversity of seabirds present on Loosiep by the end of the project. Pre-eradication baseline measures collected to allow measurement of	0.1 Project confirmation and biosecurity monitoring reports.  0.2 Biological monitoring data and report.  0.3 Agricultural harvest reports.	No extreme or unusual weather conditions inhibit progress.  Enabling conditions to complete the project are in place for the duration of the project (e.g., access to Ulithi

<p>resulting in increased food security for the community.</p>	<p>expected long-term population change (e.g., 5-10 years). See Output 2.1 for specific measures by taxa.</p> <p>0.3 Net increase in the amount of food crops grown and harvested on Loosiep by project end date. No food is currently grown on Loosiep. Gardening on the island resumes with 75% of the community having access to food grown on Loosiep by the end of the project. See Output 3 for additional specific measures.</p> <p>04. Local and national capacity to plan, implement and monitor invasive species eradication and biosecurity programmes is raised for 10 people by the project end date as measured by a pre-and post-skills assessment. See Output 4 for additional specific measures.</p>	<p>0.4 Report summarising results of skills assessment.</p>	<p>atoll, operable boats, local field team available, permission and mandate from local community remains in place).</p>
<p><b>Outputs:</b></p> <p><b>1.</b> Invasive vertebrates (rodents and monitor lizards) removed from Loosiep, with biosecurity in place to prevent reinvasion.</p>	<p>1.1 No rats remain on Loosiep island by end of year 2.</p> <p>1.2 No monitor lizards remain on Loosiep island by project end date.</p> <p>1.3 Biosecurity protocols are in place prior to project implementation and followed by local island users.</p>	<p>1.1 and 1.2 Detection methods confirm absence of rats and monitor lizards and this information is summarized in a confirmation monitoring report.</p> <p>1.3 Biosecurity plan completed. Biosecurity officer appointed by the community.</p>	<p>Rats on Loosiep are susceptible to the same bait and baiting methods that are used on similar tropical islands in the Pacific Ocean.</p> <p>The tools and methods available for the monitor lizard eradication will be effective in detecting and removing the last individual.</p>
<p><b>2.</b> Native biodiversity recovery on Loosiep Island.</p>	<p>2.1 By 2021, sea turtle nest predation by invasive vertebrates is eliminated (reduced from: 80-100% of nests predated currently to zero predated by project end).</p>	<p>2.1-2.4 Biological monitoring plan completed.</p> <p>2.1-2.4 Reports produced from monitoring surveys and data analysis.</p>	<p>Existing programs to monitor coral reef and green sea turtle nesting on Loosiep will continue for the foreseeable future.</p>

	<p>2.2 Monitor lizard and rat predation on seabirds is eliminated, allowing recruitment of seabirds within the next 5-10 years. Baseline measures of seabird diversity and abundance (e.g., red footed booby, black and brown noddy) are collected pre-eradication, methods can then be repeated at 5-10 years post eradication to measure recovery.</p> <p>2.3 A baseline pre-eradication habitat assessment for the blind snake is completed and can be repeated 5 years post-eradication.</p> <p>2.4 Local staff trained in monitoring protocols in year 1; Baseline surveys completed pre-eradication; post eradication survey completed 1 year after implementation.</p>		
<p><b>3.</b> Increased availability of natural resources and better crop production results in improved food security and quality for the Ulithi community, increasing resilience to climate change.</p>	<p>3.1 Horticulture is resumed on Loosiep, with 5 gardens planted by end of year 2.</p> <p>3.2 The subsistence economy is strengthened by increased trade and sharing of resources between islands by end of year 3<sup>1</sup>.</p> <p>3.3. 75% of the community (750 individuals) have access to improved food variety and quantity, with an increase in the carbohydrate and nutrient-rich plant-based foods necessary for a healthy diet by end of year 3.</p>	<p>3.1 Survey documenting # new gardens planted. Crop yield measured and logged as crops are harvested.</p> <p>3.2 Focus groups and written surveys completed in year 1 (baseline) and year 3 (after harvest) to quantify the amount of Loosiep-sourced food that is traded and shared among the inhabited islands.</p> <p>3.3. Household food consumption surveys to collect data on food consumed. Surveys will be conducted in August 2018 to collect</p>	<p>No unusual and severe weather events inhibit ability to complete project or grow crops.</p>

<sup>1</sup> The traditional role for nearest inhabited islands of Falalop (80 households) and Asor (12 households) is to provide and trade crops in exchange for seafood from the neighbouring islands Mogmog and Federai. Increasing supply of land-based food will strengthen socio-economic status for the Falalop and Asor communities by increasing ability to trade. This will in turn, increase variety of food available on all islands.

	<p>3.4. Women are empowered to resume food production on Loosiep, with restoration of the island's food resources under the direction of women during year 2-3.</p>	<p>pre-eradication data and each year after to measure change. Additional funding will be required for monitoring after year 3 of the grant term. Significant long-term changes are expected after crops become established.</p> <p>3.4 Record of community meetings and focus group surveys with women.</p>	
<p><b>4. Community capacity developed:</b> The local community, Yap State, and National (Federated States of Micronesia) capability to plan and implement invasive species eradication and biosecurity projects is advanced.</p>	<p>4.1 At least 10 people from Ulithi are hired and trained in invasive species detection and removal methods in year one and apply their skills to the eradication on Loosiep in years two and three.</p> <p>4.2 The Council of Chiefs and landowners on Ulithi are involved in the planning, implementation and monitoring stages of the eradication throughout the duration of the project.</p> <p>4.3 At least 2 people from the Yap State government and 1 person from the FSM government participate in the eradication in year two.</p> <p>4.4. In year two, women participate in the operational teams. Girls participate in the youth groups, with a 50% male: female participation ratio.</p> <p>4.5 Community workshop is completed to highlight biosecurity risks and provide training on effective biosecurity that includes</p>	<p>4.1 Pre and post training assessments conducted by IC field manager(s) to measure participants' change in knowledge as a result of training workshops and participation in the project. The assessment will be standardized, and results will be documented. To measure employment: Records will be maintained detailing name, level of employment, and compensation.</p> <p>4.2 The Chiefs approve the eradication plan and sign a letter of endorsement prior to the commencement of the eradication.</p> <p>4.3 Records kept of individuals participating in community and stakeholder meetings; meeting minutes collected.</p> <p>4.4. Records of individuals participating in project, disaggregated by age and gender.</p> <p>4.5. Workshop attendance certificates.</p>	<p>Trained persons remain engaged and motivated to pursue further work in conservation projects when opportunities are available.</p> <p>The Council of Chiefs agrees with the proposed methods for the project. Based on the scoping trip completed in March 2017, and a letter of support received for the project, preliminary support is in place from local community leaders.</p> <p>FSM Government has the capacity to task someone to participate in part of the project's implementation.</p>

	quarantine, surveillance and response.		
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**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)

**Output 1: Invasive vertebrates (rodents and monitor lizards) removed from Loosiep, with biosecurity in place to prevent reinvasion. Activities:**

**Activities**

- 1.1 Complete operational, monitoring and biosecurity planning for rat and monitor lizard eradication.
- 1.2 Work with project partners to complete planning for community education and outreach program.
- 1.3 Conduct community outreach on all communities of Ulithi to educate people about components of the project including: methods, impacts and benefits from the project, opportunities for involvement, and updates on project status. Outreach is designed for traditional leaders, schools and individual households. Note: Community engagement will be continued through the duration of the project life cycle.
- 1.4 Conduct surveys to measure community interest and understanding of project.
- 1.5 Complete field trials and methods development for rat and monitor lizard eradication project.
- 1.6 Implement biosecurity program.
- 1.7 Implement eradication operation for rats.
- 1.8 Implement eradication operation for monitor lizards.
- 1.9 Confirm success of rat eradication.
- 1.10 Complete monitoring to confirm success of monitor lizard eradication.
- 1.11 Complete operational reporting.

**Output 2. Native biodiversity recovery on Loosiep Island**

**Activities**

- 2.1 Develop monitoring plans for marine turtles, seabirds, reptiles and terrestrial fauna.
- 2.2 Complete baseline monitoring working with project partners and local field team; collate existing data.
- 2.3 Undertake operational monitoring of eradication and detection methods.
- 2.4 Complete post eradication monitoring for marine turtles, seabirds, reptiles and terrestrial fauna.
- 2.5 Complete eradication and biodiversity monitoring reports.

**Output 3. Increased availability of natural resources and better crop production results in improved food security and quality for the Ulithi community, increasing resilience to climate change.**

**Activities**

- 3.1 Develop monitoring plan that outlines the protocols, instruments, and methods for measuring changes in natural resources available, agricultural productivity, and poverty alleviation as a result of removing invasive vertebrates from Loosiep.
- 3.2 Undertake baseline monitoring and collate all existing data on current food consumption, natural resource and agricultural productivity. This will include a Household Consumption survey completed by a subset of households in the beginning of grant term (August 2018).
- 3.3 Develop plan to facilitate creation of new gardens on Loosiep Island.
- 3.4 New gardens are established on Loosiep Island.

3.5 In year two and year three, complete outcome monitoring of consumption of land-based food sources and establish enabling conditions for follow up monitoring and reporting.

**Output 4. Community capacity developed: The local community, Yap State, and National (Federated States of Micronesia) capability to plan and implement invasive species eradication projects is advanced.**

**Activities**

4.1 Conduct workshop to engage key stakeholders in project planning, community outreach and monitoring.

4.2 Build local project teams, incorporating the local women, girls, and youth.

4.3 Run training programme(s) for local project teams to conduct: biological surveys, community outreach, eradication operations and monitoring surveys.

4.4 Support field teams (combination of remote and on island) for duration of operation.

4.5 Engage key stakeholders in baseline and outcome monitoring.

4.6 Maintain communication with the local community and help source funds for future work.

**Output 5. Period of employment is provided for local community representatives.**

5.1 Recruit and employ 10 local temporary employees for project implementation.



## Annex 3: Standard Measures

**Table 1 Project Standard Output Measures**

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
5	The eradication field team. Training began in year one during preparation for field work. The team is currently out on Loosiep conducting eradication training.	Male Female	Ulithian	10 male	20 male 5 female	10 male 5 female	27 male 5 female	10 -15 male 2-5 Female Between 12 and 20 people total
5	Data management. A database was developed for marine turtle monitoring and training began in year one.	Female	Ulithian	1 female	1 male 1 female	1 male 1 female	1 female	1 male 1 female 2 people total
9	Field Trials Operational Plan. Describes methods to be used during the rodent and monitor lizard operational trials to occur beginning April.			1			1	1
9	Rodent eradication operational plan				1	1	1	1
11B	Paper on Acetaminophen toxicity Trial on invasive monitor lizards.					1	0	1
12A	Database for marine turtle monitoring.				1		0	1

13B	Biological census for Loosiep and at least one other island. Includes: Seabirds, Reptiles, Flora				1		0	1
14A	Project seminars organized to present results of Darwin Project. Includes presentations to Ulithi Community, Yap and FSM government, presentation to Island Conservation and all interested attendees				2	3	0	5
20	Field shelter on Loosiep and supplies used for project including (radios, trapping supplies, tools and general field equipment)			█	█	█	█	█
21	Field structure on Loosiep Island.			1	0	0	1	1
23	Value of resources raised in addition to Darwin Funding: Grants from USA Department of the Interior Office of insular Affairs and US Fish & Wildlife Service (Partners Program)			£ █		█	█	█
20	Field shelter on Loosiep and supplies used for project including (radios, trapping supplies, tools and general field equipment)			█	█	█	█	█

## Annex 4 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

The following materials have been submitted with this report, we would like to keep all supplementary material confidential at this time.

**Annex 4.1 Recommendations for Ulithi Biosecurity 2020**

**Annex 4.2 ICEAT Loosiep Rat Eradication Readiness Check Report February 13, 2020**

**Annex 4.3 Final Ulithi questionnaire**

**Annex 4.4 UFCAP Loosiep Gardening Plan 2020**

**Annex 4.5 UFCAP 2019-202 labor Report and Summary of activities**

### Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	x
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<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	x
<b>Do you have hard copies of material you need to submit with the report?</b> 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.	