

Darwin Initiative Main and Post Project Annual Report

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 - 3/31/2021	
Reporting period (e.g. Apr 2019 – Mar 2020) and number (e.g. Annual Report 1, 2, 3)	April 2019 – March 2020, Annual Report 2	
Project Leader name	Tommy Hall	
Project website/blog/social media	www.islandconservation.org www.onepeopleonereef.org	
Report author(s) and date	Tommy Hall (IC), Jason Zito (IC) Nicole Crane (OPOR), John Rulmal JR (UFCAP), April 29, 2020	

Impact of COVID-19

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 contact with the outer islands to protect people there (there are a significant number of people who also have underlying health conditions such as diabetes). As of March 2020, all fieldwork scheduled for the year has been postponed, and we do not have plans for when we will return, although we hope for 2021. This delay includes work on the rat and monitor lizard eradications, and all other fieldwork requiring travel from outside of Yap. Communication with the community is difficult (there are only radios and a limited number of satellite phones in the islands).

The turmoil and limitations put on our lives from COVID-19 have also impacted our teams' here at home'. Our workloads have increased as we try and navigate a 'new normal' (several of OPOR scientists are university and college professors who have had to transition online, for example). Collaborating has become challenging as we are no longer able to meet in person, and communication channels with our colleagues in the west pacific have been challenging.

In the month before the shutdown of travel to Ulithi, we completed all major logistics in preparation for the eradication, including boat fuel, which will allow the local team to achieve some objectives this year. Such as biological monitoring, maintaining the grid network of trails on the island, and managing the network of camera traps. The COVID-19 crisis will result in a significant setback to the progress of the project. Still, thanks to a strong partnership, great local leadership, and a highly motivated team, we don't expect any loss of momentum when we return to Ulithi.

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 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. Two introduced and invasive species, the black rat 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. This damage is illustrated by the excavation and predation of green turtle nests by monitor lizards, 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.

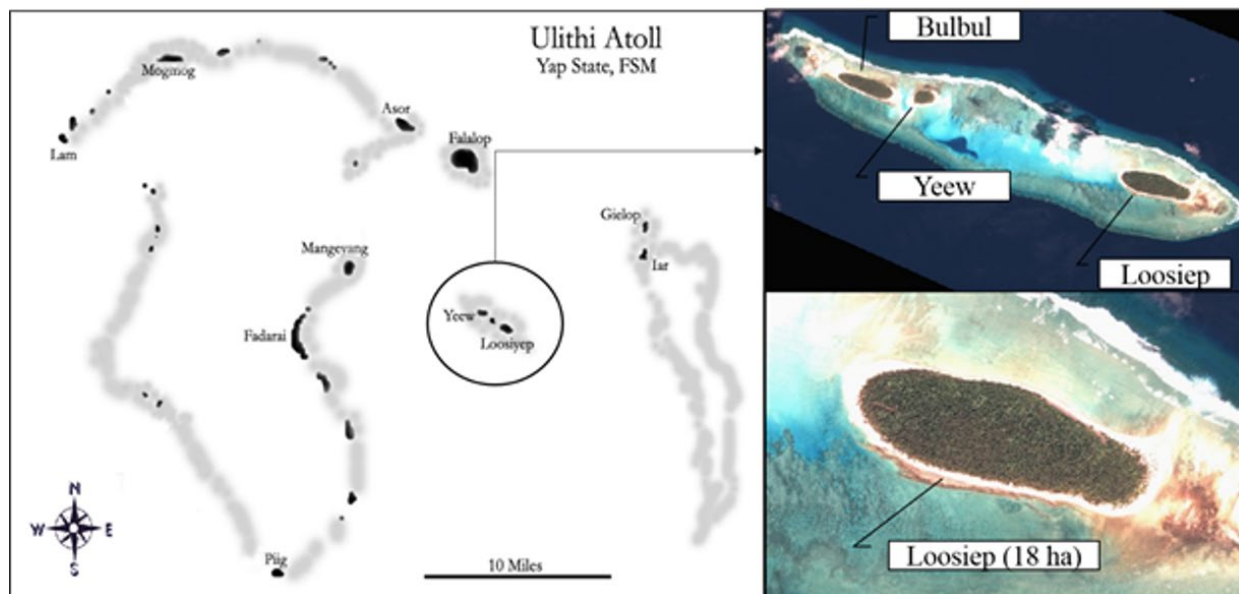


Figure 1. Map of Ulithi Atoll and Loosiep Island.

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 sustainable harvest of turtle and bird eggs. Rats 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.

Ulithi’s subsistence economy is closely integrated with nature and the community has a strong interest on relying on its natural resources. 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 and monitor lizards and facilitate a transition back to a traditional subsistence lifestyle for the inhabitants of Ulithi. Once the island is 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 leading the engagement of the youth of the community on this project. Blue Ecology works closely with OPOR and had planned to involve youth from their Annual Youth Conservation Trip this coming June to incorporate fieldwork from this project in their objectives, however the youth program was also delayed along with fieldwork.

In year two, the partnership has continued to strengthen as the project has moved into the implementation phase. Each partner has proven reliable and committed to completing their components of the project. We maintained positive and regular communication throughout the year in person when possible and via online meetings. The project continues to gain momentum and support within the local community, thanks to the strong trust and working relationship between OPOR and UFCAP. One of the highlights in year two was traveling to each of the inhabited islands to hold traditional community meetings, led by the Chief of each island. These sessions were the first opportunity to present the project together as a partnership. It strengthened the partnership and made this project more tangible to the community. One big takeaway from year two, that continues to resonate, is the importance of this partnership to the success of the project.

OPOR has done an excellent job leading community engagement through focus groups and development and implementation of the wellbeing survey; they have also worked to include youth and women. Additionally, OPOR is monitoring the marine system at 12 sites around the Atoll as part of their ongoing work. They have added several new survey sites, including Loosiep and other turtle islands, which will allow us to measure the impact invasive species and eradication have on the marine ecosystem productivity (a different grant funds this). OPOR has led the development of the wellbeing survey. They contracted a social scientist who specializes in the evaluation of communities and their connection to conservation and natural resource management. OPOR have done a fantastic job of incorporating this project, invasive species management, and biosecurity into their organizational message.

UFCAP has, unsurprisingly, proven to be an excellent partner, the partnership with UFCAP remains focused on mutual conservation and community goals. They have embraced the eradication work and, alongside OPOR have helped the community understand the concepts and methodologies. We have established a useful structure for managing the field teams that puts IC in charge of all technical decision making and maintains a strong chain of command for the field teams. UFCAP has been excellent at representing the views and concerns of the leadership on the island. In addition, UFCAP has been responsible for connecting us to many important organizations, government agencies and service providers, to support the project.

In year two we brought in a suite of experts to support the work. IC collaborated with the New Zealand Department of Conservation to allow two of their highly experienced staff to participate in the field and provide consultation on project plans and data analysis for the monitor lizard component of the eradication. The first is a herpetologist and pest species expert who helped design and implement the monitor lizard eradication trials. The second was an expert trapper and invasive species removal specialist. IC also consulted the project lead for the USDA brown tree snake program in Guam. He provided recommendations for the eradication strategy and planned to participate in the field in 2020. IC contracted a local biologist and founder of the Yap Institute of Science to work with Island Conservation's biologist to complete baseline monitoring of terrestrial resources. She has a history of working on the Atoll and the trust of the community, and her participation was welcome. IC also contracted Jen Cruce, the former project lead of the Ulithi Marine Turtle Program. Jen developed updated monitoring protocols and trained the field team to complete turtle monitoring in Year 2. She also facilitated the final turtle nest inventories and wrap-up of the turtle monitoring season. All the international interest and support on this project has been more beneficial than expected.

Strengths

- The partnership can work on project deliverables while keeping the interests of the community as the priority.
- The collective skills and experiences from each group bring a lot to the project.
- Reciprocity of the partnership has gone above and beyond what is expected. Each organization brings a unique set of perspectives and experiences that strengthens the other partners.
- The partnership has given us access to other key resources, services and people (such as Dep of Ag, EPA, CSTSI logistics, Dept of Ed, Yap State Governors office)

Lessons

- Early coordination of logistics and resource needs for times when OPOR and IC are both working on Ulithi would reduce the strain on the community. Particularly in May/June when UFCAP and OPOR have other ongoing projects.
- The impact and cost of dedicating a large portion of the community's resources and people to this project was underestimated. When this project grows into a program of work, it is recommended that a boat is purchased and dedicated to marine and terrestrial conservation work.

3. Project progress

3.1 Progress in carrying out project Activities

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

The focus of year 2 has been the implementation of field trials to help plan towards the full eradication of rats and monitor lizards from Loosiep (planned to start in year 3), as well as the eradication of introduced pigs. We successfully completed non-toxic bait uptake trials for rodents, as well as trapping trials and captive acetaminophen toxicity trials for monitor lizards. It should be noted that fieldwork slated for 2020 (year 3) was initially delayed from February to March, due to poor weather conditions, and is currently now postponed until year 4 (2021) due to travel restrictions resulting from the COVID-19 pandemic. We are adapting our project management activities considering this setback and working to ensure that planning and field efforts keep progressing towards a positive eradication outcome for Loosiep.

Our first outcome objective is the targeted eradication of rats, monitor lizards and pigs from Loosiep with biosecurity in place to prevent reinvasions. From late March through early July 2019 we conducted two separate field trial operations on Loosiep, in order to obtain critical information about our target species, and to start building the necessary capacity within our field team; which was comprised of young adults from Falalop whose ages ranged from 15 to 28. These trial operations would also serve as test-runs to solidify our logistics and iron out any holes in our project planning that should be addressed (response to weather delays, safety concerns, sourcing services and resources for the project, etc.). Ulithi is a very remote location that is not easily reached, with very limited infrastructure; which makes it a very difficult task to plan for a complex multi-method, multi-species, multi-year eradication effort. Parallel to this, our partnership also began planning outreach and educational programs for Falalop and the rest of Ulithi as a whole. That said, our trial work was paramount in preparing us to take the next steps toward implementation of a full eradication project on Loosiep. During our almost four-month operational window, simultaneous to field trial work, there was also outreach work conducted as well as surveys of households to gauge their understanding and support for the project, as well as to engage them personally to build their trust. The other communities of Ulithi, Mogmog, Fedarai, and Asor, were also visited to educate and gain support for eradications throughout the entire atoll.



Figure 2. Field manager Jason Zito (IC) works with field team members to construct monitor lizard traps to trial on Loosiep, April 2019.

Trial work began in-earnest in the beginning of April 2019. Trial #1 was carried out on Loosiep with the goal of conducting bait uptake trials for rats, bait preference trials for monitor lizards, testing of monitor lizard detection tools, testing of monitor lizard capture methods, removal of feral pigs and lastly an acetaminophen toxicity trial for monitor lizards. This trial was also the first focused field effort for our field team sourced from the youth of Falalop; this would give us a chance to work directly with field team members on building their capacity to plan and carry out invasive species eradication projects through direct participation, individualized instruction and positive reinforcement. The rodent bait uptake survey was successfully completed as planned along with baseline rodent DNA sample collection which will be important for the eradication confirmation in 2022.

We tested a variety of monitor lizard trapping methods in April ranging from purchased traps intended for fur bearing mammals to traps constructed on-site for the sole purpose of capturing adult and juvenile monitor lizards. There was great success in capturing adult individuals however we failed to capture any juvenile monitor lizards during this trip. We successfully tested the efficacy of our chosen trail camera in detecting monitor lizards and found them capable of the task. Our project was fortunate enough to have an experienced field herpetologist and invasive species expert from New Zealand's department of conservation (DOC) participate in this phase of the field work leading the acetaminophen toxicity trial, assisting in developing trapping methods for monitor lizards as well as lending his extensive experience to the project in general. The captive acetaminophen toxicity trial was successfully completed and would inform another round of captive trials in June/July to help generate more data for planning the implementation of monitor lizard trapping now planned to begin in 2021.



Figure 3. A member of the field team installing rodent baiting transect in the forest on Loosiep (left). Members of the team prepare notebooks for data collection in the field (right)

In June/July of 2019 we conducted another field trial on Loosiep. Our goals for this trip were to conduct a more extensive follow-up monitor lizard acetaminophen captive toxicity trial, remove as many pigs from the island as possible, follow-up test monitor lizard trapping methodologies (this time focusing on capturing juveniles) while also reinforcing adult trapping skills learned in April, and finally confirming the presence of invasive species on the other four turtle islands. Like the previous trial, we again had the fortune of having support from New Zealand DOC, this time an experienced invasive species trapper who would provide additional field expertise to the project. We successfully completed all our goals save for capturing juvenile monitor lizards, which will require further trial work if we are to successfully target this age class. The presence of feral pigs on Loosiep was an excellent opportunity to expand the scope of our field team's exposure to ungulate eradication work, although they did prove disruptive to our lizard trapping and rodent trials. Monitoring is ongoing to confirm whether pigs have been fully eradicated from Loosiep and the result should be confirmed later in 2020.

Vital to the planning of our eradication of invasive species from Loosiep, and the other four turtle islands, is the obvious question of whether rats, monitor lizards or pigs are present on the other four turtle islands, and not just Loosiep. To ascertain this, we conducted three days (two nights) of monitoring in June 2019 on Bulbul, Yeew, Gielob and Iar to confirm whether our target invasive species were present. Our priority was to confirm rodent presence, as ordering the necessary bait needed to occur well ahead of the planned implementation. We utilized multi-method baited "detection stations" to monitor for rodent presence and made use of the transects created from this to monitor for pigs or monitor lizards. These transects meandered through all habitat types found on each island, so that chances were greater to detect any presence of invasive species. Besides visual proof, we also observed for signs such as chewed fruits or seedlings (rats), hoof prints or rooting (pigs) and tail drag marks (monitor lizards). Field team members also noted several observations which helped to indicate that invasive species might not be present, such as abundant papaya seedlings and abundant intact fruits, denser coconut growth and seabird presence. We expected to find rats on at least one other island based on an unconfirmed sighting in recent years. Fortunately for the project, our monitoring effort yielded no invasive vertebrate species detections on the other four turtle islands; which

means implementing eradications on them are not necessary. We will repeat this monitoring in 2022 when we confirm the outcome of the rodent eradication on Loosiep.

Due to complications arising from the COVID-19 outbreak, we were unable to conduct field work as planned in Ulithi in 2020. The monitor lizard and rat eradication operations have yet to be implemented at the time this document is being drafted for this reason. The partnership is using this set-back as an opportunity to refine our plans and will strive to continue making progress towards all desired outcomes.



Figure 4. Monitor lizard captive holding pens (left), one of the captive monitor lizards in its holding pen (right).



Figure 5. The pigs on Loosiep were captured and removed alive. Here they are being transported to Falalop, the largest inhabited island of Ulithi, where they are kept as livestock.

Output 2. Native biodiversity recovery on Loosiep Island

Baseline monitoring plans were developed and surveys were conducted by Island Conservation and collaborators from May to July on Loosiep, as well as the other four turtle islands. A report summarizing the results of terrestrial biological surveys was submitted with this report. The turtle monitoring plan was developed separately with the support of a turtle expert who travelled to Ulithi to train a team of locals. Eradication and detection methods for all three species were evaluated as described in Output 1. Due to being unable to implement our full eradication operations in 2020, we cannot conduct any post operational monitoring until after the eradication is implemented.



Figure 6. Establishing a bait availability plot during the rodent trials. The team was trained to monitor the rate bait disappeared from the plot in order to determine an effective application rate.

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.

Vegetation is one of the quickest things to change in response to the pressure of invasive species being removed, especially rats and pigs. Project staff noted several food species still present on Loosiep from previous inhabitants (giant taro, coconut, local apple, breadfruit, etc). The removal of pigs will result in changes to the vegetation on the island over the next year. The monitoring plans are in place and baseline surveys of food consumption have been completed. In section 6 we discuss in detail the tool developed to measure changes in wellbeing (we have collectively decided to avoid the term poverty alleviation) as a result of the project.

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.

Community engagement and buy-in are critical to this project. With capacity developed and the goal of bettering the community in an important way; this project is a tremendous source of pride for the Falalop youth who participated in the fieldwork conducted on Loosiep in 2019. This project celebrates the growth that our field team has demonstrated during our field work in year 2. During our trial work in year 2 our field team gained valuable experience and demonstrated competency in biological monitoring, invasive species eradication practices, operations and techniques; and community outreach. It should be emphasized that it is common in Micronesia for local people to be particularly frightened of monitor lizards. Our field work provided the perfect opportunity to help not only assuage these fears but also help build a healthy respect for animals in general, even if they are invasive or a source of food. The project aims to include women and girls to promote gender equity. In section 7 we report on gender equality in greater detail. When not physically present in the field, IC staff maintain contact with the community on Falalop through a satellite phone lent to them for this purpose, as well as for communication with the outside world if there is a non-project emergency. We also utilize Skype or other online meeting platforms when local partners are around suitable internet connections.

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

A total of 17 young men from Falalop were recruited to participate in the eradication field work on Loosiep. We unfortunately lost 3 members of our team in June due to family relocations to the USA. Additional community members hired to support the eradication project included a supply inventory controller, and a radio and administrative support, both of whom were women. On the UFCAP side of things the project is led by local community members John Rulmal Jr

(our focal point on Ulithi) - Project Manager/community Liaison/Coordinator, and Lawrence Yaimangruw – UFCAP Ops Manager/ Project Supervisor/Oversight.

3.2 Progress towards project Outputs

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

After our trial work in 2019, the partnership felt prepared to move into eradication operations on Loosiep beginning with pigs and rats and culminating with removal of monitor lizards. Due to the COVID-19 outbreak we were unable to begin implementation of the monitor lizard and rat eradications; however, what may be the last pig, was removed just at the end of year 2. We will conduct follow-up monitoring to confirm the success of what may be the first documented invasive vertebrate eradication carried out in Ulithi. Biosecurity has been a priority of the project. We conducted biosecurity trainings for the field team and boat operators traveling to the turtle islands. The plan was to expand this training to the communities through a series of focus groups and trainings; however, these will have to wait until 2021. The leadership continues to promote biosecurity on Falalop, and we are happy with the level of awareness demonstrated by the field team.

Output 2. Native biodiversity recovery on Loosiep Island

To achieve native biodiversity recovery on Loosiep we first need to complete the invasive vertebrate pest removal from the island. Based on initial observations on the island it has become even more apparent that full recovery of biodiversity on Loosiep can't occur without the removal of invasive vertebrates. In year 2, pigs were eradicated from Loosiep, and we expect this will quickly result in some recovery; particularly for the green turtles and the blind snake. It should be recognized that removing pigs will remove a source of predation on sea turtle eggs and hatchlings. Reducing predation will hopefully produce a detectable positive change in sea turtle recruitment which should help improve population numbers. The completion of baseline monitoring was a critical first step to demonstrating recovery.

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.

Removal of feral pigs from Loosiep will help relieve the consumption pressure on economically important food species already present on the island, such as coconut, mountain apple and taro. A food garden plan to resume gardening on Loosiep was developed by the community and will be implemented in 2021 after the rats have been removed.

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.

We were able to exceed our goal for year 2 of recruiting 10 youth from the community to work on our field team on Loosiep and the other Turtle islands. Through the demonstration of their skills, and the results of their work, we are confident that the capacity for planning and implementing eradication operations has improved in the community of Falalop. We would not have been able to achieve the successful completion of the activities mentioned in 3.1 without a field team that had the necessary competence and motivation.

After these two trial studies, field team members now possess the competence and skills necessary to carry out the following:

- Hand broadcast rodent baiting operations: Includes surveying and installing field infrastructure, safe practices and PPE, hand broadcasting of pelletize rodent bait and monitoring bait interaction with the environment

- Rat, monitor lizard and pig trapping: Includes locating ideal trap sites, safe and effective operation of manufactured or homemade trapping methodologies, handling of live-captured monitor lizards, and to a limited extent monitor lizard captive husbandry.
- Biological monitoring for invasive and native species including installing and maintaining a network of trail cameras.
- Field camp management

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

Local community representatives have been hired for this project. See above, section 3.1 and section 7 for more detail.

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.

On a technical and a partnership level we feel confident that our project is making good progress towards the removal of harmful invasive species from Loosiep despite the massive set-back of having to postpone eradication implementation and all subsequent activities until 2021, due to the novel corona virus outbreak. The pig eradication will be confirmed in 2020 and the rat eradication will be implemented in 2021, with a high likelihood of success. However, based on results in the field and consultations with outside experts, we cannot confirm that the monitor lizard eradication will be completed within the timeframe of this grant. We do expect that the population on Loosiep will be at or close to non-detectable levels by year three, making any impact to the ecosystem negligible. We are also confident that the community will be able to resume gardening as planned. We still consider this project to be technically feasible. It is important to keep in mind that a monitor lizard eradication has never been done, and our significant investment in completing field trials, and building capacity will carry well past the life of this grant. The partnership is already in the process of searching for funds to support the completion of the monitor lizard eradication and this information has been clearly articulated to the partners.

3.4 Monitoring of assumptions

Assumption 1: No extreme or unusual weather conditions inhibit progress.

Comments: Weather will always pose a risk of inhibiting our progress in Ulithi. Before the COVID-19 Pandemic, eradication work on Loosiep was slated to begin in late/middle February 2020 and was delayed until mid-March 2020 at the request of UFCAP due to unfavourable weather conditions. Because of this our field and logistics teams were always vigilant of the weather conditions and we relied heavily on the knowledge of our partner UFCAP about Ulithi's unique wind and water patterns.

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: Same as the weather, we cannot assume enabling conditions will always be fully in place for the life of the project. Unplanned events such as bad weather, fuel shortages, serious illness, or death of a community member can easily pull significant resources from the project; such as 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 close to access 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 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 aren't 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 uptake trial in April 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 solve addressing 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, however our partnership will need to invest more time in securing significant additional funds for this conservation tool; which our current level of funding cannot support at this time.

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: Based on our experiences with field trial 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 Ulithian community to the work currently under way has generated enthusiasm for more widespread eradication efforts across Ulithi that has exceeded our expectations. No doubt there will be further circumstances where we lose members of our trained field team, yet we feel assured that those remaining will be capable of integrating new team members, and training them to become experienced and motivated eradication practitioners; thus creating a positive feedback loop where the project can adapt to losing 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.

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

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

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

This question is addressed throughout this report. The project 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. This project

directly addresses both objectives, more information specific to the issue of promoting the wellbeing of the community (poverty alleviation) can be found in Section 6.

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

This project is still in the early implementation stage and 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 Jan 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

We are in the implementation stage of this project and our biodiversity convention goals remain 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 2020; however, due to the delay we now plan to invite them when we resume work in 2021.

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

Target 9[1] - 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[2] - 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[3] - 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[4] - 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 catalyse future eradications within Ulithi that will further increase resilience.

Target 17[5] - 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[6] - 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 covid19 pandemic the project will not meet several of its objectives on time.

[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. So, we have modified the concept of 'poverty alleviation' to 'promoting wellbeing' as articulated by the community.

We worked closely with our colleague Supin Wongbusarakum to develop **well-being indicators** using focus groups and interview information gathered in January 2019, and to complete the IRB package for human subjects research. Using this data, **we developed a survey** to distribute to households on the inhabited islands of Falalop, Asor, Mog Mog and Federai. This extensive instrument was designed to address numerous questions relevant to this project. The purpose of the survey is to better understand the cultural, livelihood and wellbeing value of certain activities such as gardening, reef resource use and wild harvesting. Our goal was to broaden the survey beyond specific questions related to eradication in order to put the eradication effort into a broader context. This will allow us to truly assess the value of eradication to the people. We also included questions to better understand gender issues, gender equity, and perceived roles.

The development of the survey was done *with local partners* to ensure maximum benefit. Input was sought from multiple demographics to inform the development of the survey. When the survey was complete (stage 1), we embarked on an extensive process (stage 2) to rewrite the questions from the community perspective, and then to translate it into Ulithian. We convened a team of four enumerators (one from each of the four islands of Ulithi), chosen by the communities, to go through each question and potential response and to rewrite them, where needed, to address cultural context, sensitivity, and potential 'pitfalls'. These team leads then met with other community members to seek additional input. Following revisions, the team was trained in survey administration to ensure consistent conduct, so as not to influence data. This included role playing and practice. This exhaustive and thorough process, we believe, will result in the most authentic data to inform our eradication and other conservation work.

7. Consideration of gender equality issues

It has become clear through focus groups, interviews and the process of developing the survey, that gender equity issues exist and are exacerbated by 'outside' influences and social change. These include perceptions by the women that some men are drinking excessively, and this leads to a lack of initiative. A significant number of women also claim that men are not doing some of their 'traditional' duties such as the 'heavy lifting' of garden building, cleaning, and debris removal. In response to this, we have included several components in our education and outreach programs to both empower women, and to include men in the gardening activities (with respect to debris removal and clearing). These activities are always led by community members and are developed with cultural sensitivity and a preservation of cultural foundations at their center (we do not promote western values, rather we listen to the community issues and build around those with their leadership).

We have:

- 1) put girls in leadership roles with the youth program
- 2) included women in the enumerator team and as a part of developing the surveys
- 3) included girls and young women in the trips to Loosiep and the turtle islands
- 4) have plans to include girls in the eradication teams to Loosiep in future field seasons (per community approval)
- 5) included efforts on our youths team to raise awareness about the problems associated with drinking.

We have also initiated community-wide discussions (bi-gender) about the importance of gardens, garden crops and the work needed to physically build and maintain them. These discussions bring up issues, which invariably include alcohol, allowing for women to express their concern. Our local leader colleagues, and in particular John Rulmal (UFCAP), have facilitated these community 'summits' and discussions.

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. Section 3 of this report describes in detail outputs and activities that the project achieved in year two. We completed baseline monitoring of terrestrial resources (birds, crabs, vegetation) that will allow us to demonstrate the achievement of the project outcome. 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 year 2, the indicators of achievement were the development of plans and protocols, successful community engagement, establishing capacity with local field teams, and completion of baseline monitoring.

Two internal peer reviews of the eradication strategy and operational plan have been completed in year two by the Island Conservation Eradication Advisory Team (ICEAT). The first review was conducted in April 2019 following the initial round of field trials. It allowed the team to learn about the project, initial results, and provide feedback and recommendations for the next phase of the trials. The second ICEAT review was conducted in February 2020. It consisted of a readiness check for the rat eradication and a review of the operational plan for the first phase of the monitor lizard eradication. The review concluded that the project was operationally ready to complete a rat eradication and had a high likelihood of success. The review also evaluated the monitor lizard operational strategy. It concluded the project was in an excellent position to move forward, utilizing an island-wide acetaminophen baiting strategy, but that it was uncertain how long it would take to achieve eradication. The recommendation was to move forward, continue to collect robust data and monitor the index of abundance of the monitor lizard population. ICEAT also recommended the team continue to collaborate with leaders in the field of invasive reptile management. The results of the ICEAT review and consultations with outside experts agree that the success of the monitor lizard eradication will depend on an adaptive management style approach.

9. Lessons learnt

What went well

The project made large strides towards achieving its outputs in year 2. The support from the community materialized and the level of reciprocity with the partners continues to grow; both are key to the success of the project. There are many aspects of the project that worked well:

- The IC field manager prioritized creating the enabling conditions for the team to feel comfortable making decisions and adjustments on the fly. This increased the level of trust and quality of work. This also started to create what we refer to as 'the eradication ethic'.

- Consulting with outside experts with a background in invasive reptile management, turtle monitoring, and a specialist in native biology, strengthened the projects operational planning and baseline monitoring of terrestrial species.
- Sharing logistical needs with the community as much as possible and allowing UFCAP to manage all logistics from Yap to Ulithi to the Turtle Islands.
- Establishing a clear organizational structure for the project, specifically for the field work and field team management, was effective.
- Collaborating with the community to let them lead and complete the pig eradication. All the pigs were removed alive and kept as livestock, benefiting the community and resulting in the first eradication project completed on Ulithi, a major success towards recovering the ecosystem on Loosiep.
- Completing after action reviews with the leadership, partners and internally
- We have raised awareness in the community about the importance of invasive species and ecological health.
- Opened up channels of communication about issues such as gender equity – and how traditional roles, though in many ways preserved, have changed a bit to become problematic for women (for example men used to do heavy clearing and maintenance of gardens – now many perceive that all garden associated work is women’s work). Also, young men, who traditionally did much of that work, are leaving the island during the summers sometimes, or are away much of the year at school (for example they all go to high school on Falalop which keeps them away from home and unable to help with gardening during the year).
- Leaving a satellite phone with UFCAP leadership. Regular communication is vital to the success of this project. Ulithi has no phones or internet. Leaving the sat phone and scheduling a weekly check in when we (IC) were off island helped fill this void. Recently, during the Covid19 crisis, that sat phone has become a lifeline for the community to stay updated and to schedule resupply operations.

Lessons Learned

- Lessons learned include being flexible with expectations for project deadlines given life in the outer islands. Cultural traditions take precedent over all else, resulting in sudden changes in plans, availability of people, boats and other resources.
- Being respectful that we are working *for* and *with* the people of Ulithi, supporting them, and we need to make sure that everything we do is based in that understanding. They need to be leaders in every aspect of this work if we are to have a lasting effect, and be successful in our efforts to eradicate pests, promote biosecurity, food security, and social security.
- Dialogues with the community at meetings have demonstrated that they value the concept of an agroforest/permaculture approach to managing their islands, with a focus on stewarding the land for healthy natural ecosystems. Involving the community in the work on Loosiep has helped solidify the importance of restoring their islands through invasive species removals.

What we would do differently

- Extend the length of field trials and increase the presence of experienced eradication field staff. This was not possible due to funding limitations and staff availability.
- Plan and budget more time to hold meetings with high level stakeholders in Yap state and FSM.

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

Feedback from 2019: The report states that, at the request of local communities, the project has broadened its scope to include invasive vertebrate eradication on four other islands occupied by turtles, and the removal of introduced pigs from Loosiep island. How will this be funded and resourced? Using Darwin funds or matching funds? Will this increase in project scope have an impact on the outputs and outcome?

Response: Increasing the scope to include invasive species removal from the other four turtle islands may not have been possible with Darwin funds alone. However, IC is committed to the objective and, if necessary, would have sought to secure additional funding. Leveraging the resources already in place for the Loosiep project would be the most cost-effective way to achieve this objective. Fortunately, there are not invasive vertebrate pests on those islands, and a successful eradication on Loosiep will achieve the goal. The pig eradication required minimal additional resources beyond boat fuel and some trapping supplies. Pigs will interfere with our methods for targeting both rats and monitor lizards, increasing the risk of failure. So, their removal was critical to the success of the project.

Feedback from 2019: The gender equality targets, and strategy are unclear. Please provide specific details.

Response: This is addressed in section 7

11. Other comments on progress not covered elsewhere

Results from gardening calendars

We have received and analysed feedback from **gardening calendars** distributed to 12 households on Falalop. Initial data are summarized here:

Table 1. Summary of crop damages data from food garden calendar surveys.

Crop Damage	#	%
<i>rats</i>	63	94.03
<i>insects</i>	13	19.40
<i>bats</i>	49	73.13
<i>other animal</i>	7	10.45
<i>wind</i>	2	2.99
<i>multiple animals</i>	57	85.07
<i>single animal</i>	9	13.43

**Note that 94% of reported crop damage is from rats.

14.3% of crop use was reported as 'wild' or non-cultivated plants. These are a significant part of crop use and include 'wild apple' which is abundant on Loosiep.

Table 2. An overview of crop cultivation on Ulithi.

crops	#	%
<i>taro</i>	82	40.59
<i>banana</i>	34	16.83
<i>coconut</i>	71	35.15
<i>papaya</i>	5	2.48
<i>sweet potato</i>	9	4.46
<i>pumpkin</i>	1	0.50

**Note that some crops are likely not cultivated due to high damage from pests such as rats. Also note that some islands 'specialize' in certain crops (for example pumpkin is cultivated and prized on Asor). Pumpkin on Asor is heavily affected by rats so fewer gardens are producing them there.

Story telling project (OPOR)

During this time, we also engaged in a **storytelling project** (with additional funding from a separate source) to capture important stories from community elders. We translated those stories (6) into English and into 2 forms of Ulithian ('proper' and a more 'modern' form) working closely with community members, and focusing on youth, women and girls. Key 'messages' were captured from these stories, and our science team interpreted them from a western science perspective. The goal was to intersect traditional values and messages and support them with western science values. This project was empowering to the youth, and we held several youth meeting to discuss the importance of tradition and storytelling. The women were the storytellers and the girls were the team leaders. This latter role is non-traditional but is another example of how communities are changing. We discussed gender roles, gender equity, and reconnecting to leadership roles women used to have. These discussions were with both men and women.

We distributed household surveys, via the enumerators, on all 4 islands: Falalop, Mog Mog, Asor and Federai. To date we have received 67 completed surveys; all households from Mog Mog and Federai, and 11 households from Falalop. The remaining households from Falalop and all from Asor have not been received. Received surveys have been scanned and the data forwarded to the data entry and analysis team. It has taken considerably longer than we had expected to complete the survey work. This is due to the nature of life in the outer islands (for example several important leaders have passed away during this time, and all human resources are diverted to preparing for funerals and surrounding activities). These kinds of events, which also includes visitations by important government or other people, take priority in the lives of outer islanders. Our work there is to support people rather than be a burden on them, and so everything we do is carried out on a schedule dictated by the lives of the people we work with. Sometimes this means delays.

*The story telling project was funded by a different grant.

Aerial Drone Mapping (OPOR and IC)

We created high definition maps of Asor, Mog Mog, Federai Loosiep and Bulbul islands from drone mapping completed in 2019. Those maps have been printed and are ready to send to the communities. The imagery will also be used to complete a vegetation analysis and serve as a baseline for vegetation recovery and agroforest.

*The drone used for mapping was not purchased with DI funds. Most mapping flights were carried out by a volunteer

Reef surveys (OPOR)

We have completed initial reef surveys and initial analysis of isotopes from reef organisms. We hope that with long term collection and analysis of these data we might see an ecological signature of the removal of invasive species from Loosiep.

*Reef surveys are part of deliverables from a different grant from this project.

Monitor Lizards

We have redefined our objectives for monitors lizards:

- The eradication is moving forward and by end of year three monitor lizards reduced to undetectable levels.
- By the end of year three the monitor lizards' impact to the ecosystem and the community's ability to resume gardening on the island are has been eliminated

- With consistent effort utilizing current methods the monitor lizard population will be eradicated through attrition in an estimated 3-5 years.
- We will manage the eradication adaptively, collaborate with experts and continue to pursue new methods and strategies to eradicate monitor lizards.

12. Sustainability and legacy

We are in communication with state and national entities and welcome their inclusion 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 program of this project led to an increase in interest to eradicate rats both from the inhabited islands and other uninhabited garden islands. Specifically, to increase productivity of traditional agricultural practices. Due to the Covid19 crisis, the supply chain to Ulithi (and Yap) has been significantly impacted; further increasing the communities desire to improve the agriculture and natural resource management and reducing 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 the turtle islands project.

13. Darwin identity

The Darwin Initiative is recognized on Island Conservation's website blog and social media accounts. The capacity of our communications team has been significantly reduced in the past year, and our ability to develop communications products has been limited. We intend to increase the visibility of the project, especially as the implementation phase begins. The project continues to be recognized as a Darwin Initiative project by the partners and local leadership. The understanding from community leadership is that while this is a distinct project with clear objectives, it is also part of a larger program of work.

Below are links to blog posts on the Island Conservation website, The Darwin Initiative is clearly identified as a lead funder of the project:

[Restoration Brings Hope for Wildlife on Ulithi Atoll](#)

[COVID-19 Delays Implementation on Loosiep Island, Ulithi Atoll](#)

14. Safeguarding

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 always expected to follow these policies. Any volunteer or subcontractor brought on to the project by IC must sign a contract that explicitly outlines 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 violates the policy.

15. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2019 – 31 March 2020)

Project spend (indicative) since last annual report	2019/20 Grant (£)	2019/20 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
TOTAL				

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2019-2020

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
<p>Impact</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>(Report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity e.g. steps towards sustainable use or equitable sharing of costs or benefits)</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 the pigs eradication nearly complete and in a confirmation stage, the ecosystem on Loosiep will quickly start to rebound . Most importantly turtle nest predation will be significantly reduced, and nesting success rates in 2020 should see a marked increase.</p>	
<p>Outcome</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</p>	<p>(Report against the indicators on progress towards achieving the project Outcome)</p> <p>The pig eradication is in the confirmation phase. No pigs are known to remain, and the team is monitoring the island. Therefore, it can be assumed no invasive pigs remain on Loosiep. This was a critical first step before beginning the rat and monitor lizard eradication.</p> <p>Eradication field trials were completed in year 2 as well as eradication activities. Baseline evaluations of seabirds and other terrestrial species</p>	<p>(Highlight key actions planned for next period)</p> <p>It should be noted that the Covid 19 pandemic has forced the project to halt major operations until next year reducing the expected progress and achievements. The partnership will continue to maintain communication with Ulithi to work together as much as possible.</p> <p>The implementation of the rat and monitor lizard eradication projects will now go ahead in 2021. The gardens were planned to start after the rat removal, and will also have to be</p>

	<p>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>were also completed. Capacity was developed significantly in multiple areas and both the community and the field team is ready to initiate eradication operations. These outcomes are discussed in more detail in section 3.3 above.</p>	<p>delayed. The partnership is managing the situation adaptively. Luckily the project has developed the local capacity to complete important activities without direct oversight including seabird monitoring, baseline evaluation of invasive populations, confirmation of the pig eradication, continued community outreach and education.</p>
<p>Output 1. 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><i>(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)</i></p> <p>1.1 The rat eradication will be implemented in 2021. If the project is successful, the turtle islands will be declared rat free in March 2022.</p> <p>1.2 The monitor lizard eradication will resume in 2021. After evaluating effective removal methods, it was 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>1.3 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.</p>	
<p>Activity 1.1 Complete operational, monitoring and biosecurity planning for rat and monitor lizard eradication.</p>		<p><i>(Report completed or progress on activities that contribute toward achieving this Output)</i></p> <p>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. An internal review and readiness check was completed before the Covid 19 pandemic forced a delay in operations.</p>	<p><i>(Outline what will be carried out in the next period)</i></p> <p>Due to the delay in implementation, the plans will be reviewed once again to determine where efficiencies can be found. The monitor lizard operational plan will be circulated to additional experts to further improve on the novel approach.</p>
<p>Activity 1.2 Work with project partners to complete planning for community education and outreach program.</p>		<p>The initial planning for this was completed in 2019. However,</p>	<p>The partnership will continue to work together remotely to update the</p>

	community engagement is a dynamic process and has been managed adaptively to address the needs of the community.	community on the project. A satellite phone was left with UFCAP leadership to maintain the ability to communicate, this will be a critical tool in dealing with the Covid19 pandemic as the community is closed to visitors.
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.	Community meetings were held on each inhabited island and included representation from all primary partners (OPOR, UFCAP, IC). These meetings were held in the traditional format led by the chief of each island. Key components of the project were presented including: an update on project progress, updates on trials and plans for eradication, expected results, and a presentation on biosecurity.	Community outreach will continue, however non-resident project partners will not be present. When there is more clarity on when travel restrictions will be lifted, plans for a trip and further outreach will be established.
Activity 1.4 Conduct surveys to measure community interest and understanding of project.	In person surveys were completed by OPOR a in 2018. A formal survey measuring indicators of wellbeing was developed and completed in 2019.	Follow up surveys and working groups are planned at the end of year three to measure against baseline and evaluate interest in next steps.
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.	The Biosecurity Plan will be formally implemented. Biosecurity trainings will be conducted with field team and local community.
Activity 1.7 Implement eradication operation for rats.	Completed trials, developed operational plan, completed logistics for eradication in 2020 which is now delayed.	Rat eradication operations scheduled for 2021.
Activity 1.8 Implement eradication operation for monitor lizards.	The trials conducted in 2019 served as the first phase of population knockdown.	Full scale implementation of monitor lizard eradication is now planned to begin in 2021.

Activity 1.9 Implement eradication operation for pigs and confirm success.	The knockdown and mop-up phase were completed. All pigs were captured alive and transported to Falalop as livestock. The locals are currently monitoring the island with cameras to confirm the eradication is complete.	The pig eradication is currently in the confirmation phase. It is expected to be confirmed successful in 2020
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>Output 2. 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 2021 an additional decline in nest predations is expected.</p> <p>2.2 Baseline measures of abundance were collected in 2019. These formal surveys provide further evidence that no seabirds nest on Loosiep, however they are abundant on nearby islands. A formal report was developed.</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 2020.</p>
Activity 2.1 Develop monitoring plans for marine turtles, seabirds, reptiles and terrestrial fauna.	Completed 2019. A separate plan was completed for turtles.	Continue to adapt and update plans as needed.

Activity 2.2 Complete baseline monitoring working with project partners and local field team; collate existing data.	Baseline monitoring data was completed in 2019.	Support local team remotely as they continue to collect monitoring data.
Activity 2.3 Undertake operational monitoring of eradication and detection methods.	Detection methods of pigs, rats and monitor lizards was established. Eradication monitoring of pigs is underway. Eradication monitoring of rats and monitor lizards is delayed until 2021	Support monitoring to confirm pig eradication. Undertake eradication monitoring for rats and monitor lizards in 2021.
Activity 2.4 Complete post eradication monitoring for marine turtles, seabirds, reptiles and terrestrial fauna.	N/A	N/A
Activity 2.5 Complete eradication and biodiversity monitoring reports.	N/A	N/A
<p>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.</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 2019	Continue to work with partners to adaptively manage monitoring plan.

<p>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).</p>	<p>Completed. Food garden calendar was completed in 2019. The indicators of wellbeing survey had a strong focus on the natural resources and their management.</p>	<p>Complete data analysis and report of wellbeing survey.</p>
<p>Activity 3.3 Develop plan to facilitate creation of new gardens on Loosiep Island</p>	<p>Completed.</p>	<p>Review and revise plan as necessary.</p>
<p>Activity 3.4 New gardens are established on Loosiep Island.</p>	<p>To be established in 2021.</p>	<p>Work with partners and community to ensure logistics and resources are available.</p>
<p>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.</p>	<p>No formal monitoring of land-based food sources was completed.</p>	<p>Plans are in place to implement the food garden calendar survey again, after gardens are established at the end of 2022</p>
<p>Output 4. 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 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</p>	<p>4.1 A field team of 15 was trained in eradication techniques and marine turtle monitoring. The larger team was broken up into teams of five, each with a team leader. Additionally, support was brought in to manage data collection, inventory management and boat operations. UFCAP continues to support the project and manage all logistics and local personnel. The leadership of UFCAP and IC have worked closely in the overall eradication project management.</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.</p> <p>4.3 We have invited Yap State EPA and Yap State department of Ag to participate in the eradication operation, they have acknowledged the invitation and expressed interest. We are still working on identifying someone from the National government to include, we have been in touch with the FSM focal point for GEF.</p> <p>4.4 In year two, women participated in the operational teams and youth groups.</p> <p>4.5 Several community workshops have been completed, and they have been successful. More community workshops and are planned in the future, these are an effective way to give everyone in the community a voice.</p>

	that includes quarantine, surveillance and response.	
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, the completion of an eradication operation will solidify all previous training efforts	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.
Output 5. Period of employment is provided for local community representatives.		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.		More than 10 local temporary hires were employed in year 2.

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
<p>Impact (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.</p>			
<p>Outcome: (Max 30 words) 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>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>0.1 Project confirmation and biosecurity monitoring reports.</p> <p>0.2 Biological monitoring data and report.</p> <p>0.3 Agricultural harvest reports.</p> <p>0.4 Report summarising results of skills assessment.</p>	<p>No extreme or unusual weather conditions inhibit progress.</p> <p>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).</p>

<p>Outputs:</p> <p>1. 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>2. 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>2.1-2.4 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>3. Increased availability of natural resources and better crop production results in improved food</p>	<p>3.1 Horticulture is resumed on Loosiep, with 5 gardens planted by end of year 2.</p>	<p>3.1 Survey documenting # new gardens planted. Crop yield</p>	<p>No unusual and severe weather events inhibit ability to complete project or grow crops.</p>

<p>security and quality for the Ulithi community, increasing resilience to climate change.</p>	<p>3.2 The subsistence economy is strengthened by increased trade and sharing of resources between islands by end of year 3¹.</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>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 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>4. 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 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</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>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</p>

¹ 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>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>4.2 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>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>
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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 and	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				2	3	0	5

	Community, Yap and FSM government, presentation to Island Conservation and all interested attendees							
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.							
23	Value of resources raised in addition to Darwin Funding: Grant from USA Department of the Interior Office of insular Affairs							
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)

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@itsi.co.uk putting the project number in the Subject line.	yes
Is your report more than 10MB? If so, please discuss with Darwin-Projects@itsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	no
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	yes
Do you have hard copies of material you want 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.	no
Have you involved your partners in preparation of the report and named the main contributors	yes
Have you completed the Project Expenditure table fully?	yes
Do not include claim forms or other communications with this report.	