



## Darwin Initiative Main: Final Report

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

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

**Submission Deadline: no later than 3 months after agreed end date.**

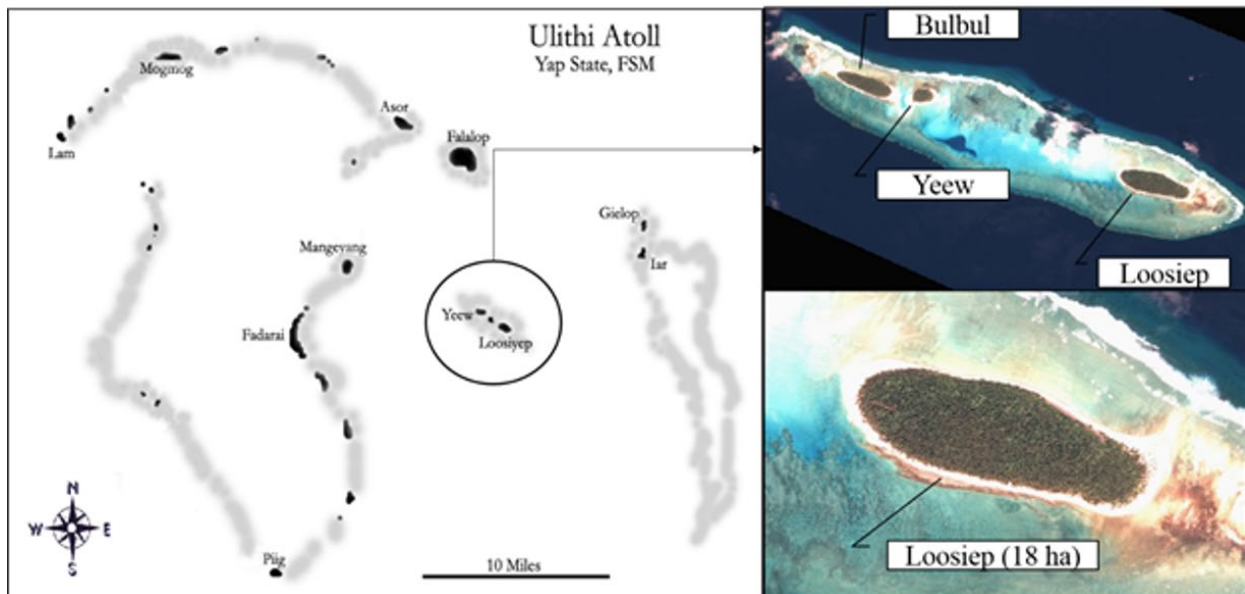
**Submit to:** [BCF-Reports@niras.com](mailto:BCF-Reports@niras.com) including your project ref in the subject line.

### Darwin Initiative 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  |
| Project partner(s)                | Ulithi Falalop Community Action Program; One People One Reef   |
| Darwin Initiative grant value     | £350,000.00  |
| Start/end dates of project        | July 1, 2018- March 31, 2024   |
| Project Leader name               | Tommy Hall   |
| Project website/blog/social media | <a href="http://www.islandconservation.org">www.islandconservation.org</a><br><a href="http://www.onepeopleonereef.org">www.onepeopleonereef.org</a> |
| Report author(s) and date         | Tommy Hall (IC), Madeleine Pott (IC), Nicole Crane (OPOR), John Rulmal JR (UFCAP), June 27, 2024   |

## 1 Project Summary

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



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

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

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

## 2 Project Partnerships

There are two lead partners that support Island Conservation on this project: Ulithi Falalop Community Action Program (UFCAP) and One People One Reef (OPOR). UFCAP, representing Ulithi’s leadership and community, and is the primary on-the-ground partner of the project.

UFCAP played a core role in planning and logistics, which well-suited their position as a local partner. They were effective at leading logistics, leveraging their existing capacity. They have an organized internal community decision-making structure. If someone is not available another person is always available to act on their behalf.

- UFCAP worked closely with OPOR to conduct community engagement and has created excitement and momentum for the project within the community.

- The leaders of UFCAP have presented the project to other Micronesian leaders and government groups which has garnered interest in the potential for similar work, particularly on other outer islands.

The other primary partnership with One People One Reef (OPOR) has also proven to be very effective. They already have a strong partnership with UFCAP from eight years of community-driven conservation projects. They have been key to our ability to quickly garner the trust of UFCAP, the traditional leadership, and the community. Their essential contributions are below.

- Conducted community surveys and studies to establish baseline understanding of the project. This included evaluating the communities understanding of invasive species, their impacts and management strategies and potential outcomes.
- Provided excellent support in planning of field work, worked with several of the local Ulithi team to complete initial field surveys (terrestrial and marine) on Loosiep.
- Engaged various community groups including the women, schools and leadership in small groups and large community “town hall” style meetings. They have also communicated with the communities on some of the smaller islands of Ulithi.

Throughout the duration of the project, spanning from its inception through the planning and implementation phases, we upheld consistent engagement with key stakeholders. This included regular communication and collaboration with the Council of Ten, comprised of Chiefs from Falalop, as well as Chiefs from the other three inhabited islands within the Ulithi atoll: Mogmog, Asor, and Federai. Additionally, we maintained close ties with the Council of Tamol, which represents the Yap Outer Islands as the fourth branch of the Yap state government, ensuring that community stakeholders were actively involved and informed at every stage of the project. It was standard practice to hold a brief in-person meeting every time anyone from the outside arrived to Ulithi. These meetings served as an opportunity to update the Chiefs and to reinforce ties to the communities and shared commitment to project goals.

We originally listed a fourth partner, Blue Ecology, in our application. Due to a health emergency of the Director of Blue Ecology, they had to pause direct operations, and One People One Reef assumed responsibility for their activities. Blue Ecology continued to support the project in an advisory capacity but did not contribute to the project as originally expected.

This community is so inspired by the outcomes of the project that they are currently discussing the possibility of eradicating rats from the uninhabited islets that make up Ulithi Atoll. With the support of the Yap State Governor, the Council of Tamol, the Resource, Education, and Development Committee of the Yap State Legislature, Yap’s Division of Agriculture and Forestry, and UFCAP, Island Conservation applied to the U.S. Federal government for funding to remove invasive rats from six islets within Ulithi Atoll (see Section 12.2). A copy of the proposal narrative and letters of support have been provided as evidence of the community’s ongoing interest.

IC drew on a broad network of specialists to complete the project. Other project supporters and partners included:

- Two experts from the New Zealand Department of Conservation: A herpetologist and pest species expert helped design and implement the monitor lizard eradication trials, while an expert trapper and invasive species removal specialist observed and advised.
- 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, who developed updated monitoring protocols and trained the field team to complete turtle monitoring in Year 2; she will also lead turtle monitoring in 2024.

## 3 Project Achievements

### 3.1 Outputs

We had five principal outputs: 1) to remove invasive vertebrates and instate biosecurity measures for Loosiep; 2) see the recovery of native biodiversity; 3) witness better crop production; 4) develop community capacity for invasive species management; and 5) provide employment for local community members. Thanks to the support of the Darwin Initiative and other funders, and despite three years of delays due to the COVID-19 pandemic, the partnership has achieved nearly all of these outputs.

The recent global pandemic was unprecedented in the 21<sup>st</sup> Century and was not included as one of our assumptions in our original logframe. The pandemic highlighted our collective expectation that international shipping will continue as expected and international and domestic travel will continue uninterrupted. As we weathered several years of delays over the course of the pandemic, we learned to think more broadly about potential risks and be more cognizant of these and similar assumptions.

When we started the project, we were only aware of two invasive vertebrates on Loosiep: rodents and monitor lizards. Our goal was to eradicate these two species (Output 1). As the project progressed, we learned of the presence of damaging feral pigs on Loosiep. Feral pigs are notorious for the devastation they can wreak on agricultural crops. Given the community's desire to re-establish Loosiep as a gardening island, feral pigs were added to the list of invasive species slated for removal—and were successfully removed in 2020. Rodents were removed in 2023 and follow-up surveys to confirm our success were conducted in 2024, revealing that the island was free from invasive rats. In order to sustain the partnership's hard work and maintain this output, the partnership has been working towards a biosecurity program adapted to the Ulithi environment and people. Because of COVID delays and in accordance with the community's preferences, Island Conservation supported the creation of a biosecurity plan template and local (Loosiep-centric) biosecurity guidelines. The local biosecurity guidelines have been used by project teams as they accessed Loosiep. The biosecurity template will be used to guide conversations during a series of workshops in June 2024 as the community completes the template, identifying the measures and protocols that will work best for them. Because the biosecurity plan for the wider Atoll is still in development, a biosecurity officer has not been appointed by the community, however, there are plans in motion to establish a formal Atoll Resource Team that will include an appointed biosecurity officer. The process of establishing a biosecurity program on Ulithi is taking longer than anticipated, but it has been community-driven by design, ensuring the true benefits of a lasting and sustainable biosecurity program will be realized based on the communities' and the Atoll's need.

There is relatively little precedent for successful reptile eradications globally, which led us to the assumption in our original logframe that the tools and methods available for the monitor lizard eradication would be effective in detecting and removing the last individual, while also acknowledging that a complete eradication of monitor lizards could take anywhere from 12-36 months to complete. Unfortunately, extensive delays have made it impossible to complete the monitor lizard eradication before the conclusion of this award. One of our greatest concerns was that juvenile monitor lizards are hard to detect and target because they are largely arboreal. At the beginning of the eradication, all adult individuals were quickly eliminated from the population, and we witnessed juveniles increasingly using the terrestrial habitat, demonstrating that the juvenile use of trees may be more related to evading predation by adult monitor lizards than originally thought and is not entirely about resource partitioning. We also witnessed juvenile monitor lizards consuming the baits. As a result, we now know that these juveniles are susceptible to the same ground-based removal methods that eliminated larger adults. Thus, we believe that with additional time and funding, the partnership can eliminate the last monitor lizard from Loosiep—an outcome that the community is keen to make a reality. An additional benefit to the community from developing and ground-truthing these methods is that they now have the capacity to effectively control unwanted monitor lizard populations at the landscape scale, instead of just targeting individuals. The sense of threat the community experienced from the adult monitor lizards is not present with the juveniles, which has meant

that other holistic restoration efforts—i.e. gardening and biosecurity—have been able to proceed as planned.

Island eradications typically have far-reaching positive impacts on natural resources and we expected to see biodiversity on Loosiep to begin the process of recovering by the end of the project (Output 2). Prior to implementing the eradication, no seabirds were nesting on Loosiep, 100% of sea turtle nests were depredated by invasive species, significantly lower land crab populations occupied Loosiep than uninvaded islets, and no endemic Ulithi Atoll Blind Snakes could be found on Loosiep. Although we would not expect seabirds to resume nesting on Loosiep in the one year since the eradication of rats was completed or to see immediate changes in the blind snake population, a post eradication survey indicated that populations of native reptiles and land crabs have already increased significantly. Land crab species, including coconut crabs, were observed exhibiting population densities more than 3x higher post-eradication, compared to 2019 baseline monitoring. Similarly, Loosiep's density of non-monitor lizard reptiles is now comparable to the densities of these species on nearby uninvaded islands. Before the commencement of the project, there was a lack of community members trained in terrestrial biological surveys. However, through our initiative, we successfully trained a total of 35 individuals, primarily young men. Initially, we began with a cohort of 10 individuals and gradually replaced 4 of them with new participants, with the overarching aim of exposing as many young adults as possible to the project's objectives and methodologies. Before each field visit, particularly during the re-baiting stage following the eradication phase in June 2023, we conducted comprehensive orientation sessions to reinforce biosecurity practices, project objectives, safety measures, and adherence to traditional protocols.

The production of natural, locally-produced foods is crucial to the food security and climate resilience of the people of Ulithi and this project sought to enhance their ability to grow foods on Loosiep (Output 3). As an integral component of our project implementation, we undertook the planting of a diverse range of crops, including 40 banana plants, 6 breadfruit trees, 4 lemon trees, and 8 cassava plants, in addition to the previously mentioned 20 cuttings of sweet potatoes (5 gardens total). These gardens will create compost to improve the soil for future plantings of sweet potato and land taro. This comprehensive selection of crops was strategically chosen to not only assess the presence of rats but also to promote food security and agricultural diversity within the community. Drawing from our observations on islands with higher rat densities, particularly Falalop, where sweet potatoes are often targeted by rats, we aimed to employ a multifaceted approach to monitor rat activity, including the observation of plant damage and other indicators.

We were operating under the assumption that no unusual or severe weather events would inhibit the ability to complete the project or grow crops. Unfortunately, Ulithi and the surrounding islets entered a period of drought since gardens were established, so food production has been lower than expected. Additionally, because of the extensive delays due to COVID and the short amount of time between the rodent eradication and end of the project, we were not able to repeat the household food consumption surveys or systematically document a change in access to local foods for the entirety of the community during the period of the award. As a result of the conversations and workshops that stemmed from the household questionnaire, OPOR and the community organized two island-wide workshops focusing specifically on unity, communication, *the role of youth and young women, and the need for an Atoll-wide management plan that will incorporate elements of trade and garden products*. As a knock-on activity, the community is drafting a management plan, which is being advised by a local committee. This committee has been accepted by the Ulithi and the Council of Tamol in Yap (traditional leadership structures). The committee, Ulithi Hofagie Wa'gay, is comprised of representatives from each including two elder advisors (one male, one female), two young adult leaders (one male, one female), and two youths (one male, one female). It is the first of its kind to oversee and advise Ulithi's current leaders and chiefs, focusing on the collective interest of resource management. One of the first orders of business of this group is to flesh out the Biosecurity Plan and ensure it is put into action. Thus, although we may not have documented evidence of having strengthened the "the subsistence economy...by increased trade and sharing of resources between islands by end of 2024," our activities and the support of the

Darwin Initiative have helped position the community to do just that, and in a manner which explicitly includes both women and youths.

In a similar vein, while we cannot say that 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 2024, we have witnessed the community grow its understanding of and interest in strengthening community and creating resilience. This has translated into more focus on the gathering, tending and preparing of local food from gardens and wild harvest at the elementary schools and the Atoll-wide high school (through culture class and teacher activities) and the inception of a new youth group: YOU (Youth of Ulithi). This project has set up the community of Falalop to make more diverse, healthy foods available to the whole of the atoll and we estimate that this project has touched over 80% of the community, positioning them to benefit from healthy, locally-grown foods.

As the first invasive species eradication in Yap Sate, the partnership had hoped to cultivate capacity at several levels: within the local community, within Yap State, and more broadly within the Federated States of Micronesia (Output 4). Overall, the commitment, engagement, and participation of the Ulithi community has been outstanding. This project truly created island restoration champions; the Ulithi community is so happy with the outcomes they desire to expand this work throughout Ulithi Atoll and on other remote island communities of Micronesia. At the outset of the project, no Ulithians were employed in eradication work, but by the end of the project, 35 people from Ulithi were hired and trained in invasive species detection and removal methods. Overall, project team members scored an average of 13.4/20 across a suite of eradication skills (increased from 2.2/20; a 509% increase), demonstrating substantial growth in these areas of expertise. Despite several years of delays, local Ulithians were able to apply their (pig, monitor lizard, or rat) eradication skills on Loosiep either in the initial training activities (2018-2019), during the pig eradication (2019), or during the monitor lizard/rat eradication and confirmation (2023 & 2024). Although we achieved this output, the three-year delay meant that some capacity was lost between the initial trainings and the eventual eradication in 2023, an eventuality that we were prepared for and identified within our original assumptions. Nonetheless, our trainings yielded impressive results that indicate an increased community capacity to carry out further eradications and holistic restoration efforts.

A total of 10 people were employed during the eradication of rodents and as part of the monitor lizard eradication. Despite delays, support from the Council of Chiefs and landowners on Ulithi was unwavering. They approved the eradication plan and signed a letter of endorsement prior to the commencement of the eradication in 2020, and again in 2022. They also approved the partnership's decision to delay the eradication work for every year of delay that the project experienced. We had an assumption that the FSM Government had the capacity to task someone to participate in part of the project's implementation. Unfortunately, with the extensive delays, the possibility of having someone participate dwindled more each year and no one was able to participate from the Yap State Government in 2023 when the eradication finally happened. A total of five women participated in eradication training and operations, although none were able to participate in the 2023 eradication. Our community participation records show that 50% of girls participated in youth group activities. We opted not to deliver biosecurity certificates as the biosecurity plan is still in development. We will use this indicator for future trainings, once the plan is finalized. All team members hired as part of the eradication team were provided with a biosecurity training, however, but no certificates were delivered at the time.

### **3.2 Outcome**

The project aimed for the removal of harmful invasive species to result in native and endemic species recovery and improved conditions for horticulture, resulting in increased food security for the community, an outcome that has been achieved and is just beginning to pay dividends to nature and people.

Our field visits indicate that we have successfully removed two of three invasive vertebrates (rats and pigs), with a third (monitor lizards) actively being managed by UFCAP and community members. Because of the greatly reduced timeframe for eradicating this species under the

Darwin Initiative (three years of delays), it became increasingly unlikely that we would completely eradicate this species by early 2024, though we expected to eliminate the adult population (which is now undetectable through standard monitoring) by the end of this grant. In retrospect, the partnership should probably have modified the lograme to indicate that we did not expect to completely eliminate the population of monitor lizards before the end of the grant, but after so many changes to this award, we failed to do. Recent surveys and observations indicate that this species can be eradicated with time, possibly within the next twelve months. Additional outside funding will help sustain this work. Our inability to achieve eradication of the juvenile population stems from the fact that the biology of this species in the wild is relatively unknown and there is little precedent for eradicating invasive reptiles globally—factors which we took into account when formulating our assumptions. In addition, due to three years of delays, we could not extend the period of performance of this award to include confirming the eradication of this species.

We collected pre-eradication data that showed that no seabirds actively nested on Loosiep in 2019 and positioned the partnership to continue monitoring seabird populations into the future. Because seabirds take several years to recolonize restored habitats, we did not expect to see recovery of this species. We did, however, expect to see a dramatic increase in sea turtle nesting success. Prior to the eradication, 100% of nests were depredated by either pigs or monitor lizards. In 2024, for the first time in over half a century, community members witnessed sea turtle hatchlings making their way to the ocean undisturbed by invasive species. Unfortunately, more systematic surveys of the sea turtle nests will not be conducted until May-June 2024, outside of this grant period. The timing of those surveys coincides with peak sea turtle nesting. Once again, extensive delays and biological windows made it impossible to complete these surveys within the grant period. However, preliminary data collected outside the grant period, in May 2024, indicate that sea turtle nest depredation was at zero—a marked difference from surveys conducted with monitor lizards, rats, and pigs present in high densities.

There has been a net increase in the amount of food grown on Loosiep. Gardening was not possible prior to the project, and there are currently five gardens being tended by the community (monthly watering and replanting). Sadly, Ulithi is experiencing a drought right now—a factor outside of the control of the community or the partnership and an assumption that we had considered when formulating project outputs. Although current conditions have somewhat depressed food production, once this period of drought passes, we fully expect at least 75% of the community to have access to food grown on Loosiep. Without any time remaining on the grant, there are no mitigating actions that can be taken at this time. The local capacity to plan, implement and monitor invasive species has grown exponentially thanks to this project, as has their awareness of the wide-ranging impacts of invasive species. Our skills assessments indicate that local staff were relatively unfamiliar with the tools, techniques, and methods of conducting invasive species eradications. By the end of the training and eradication period, all staff scored a minimum of 13/20 and an average of 13.4/20 across a suite of five core skills. Unfortunately, national capacity has not been greatly influenced by the project. With a narrow window for implementation and after having delayed the implementation a full three years, it was not surprising that state and national representatives were unable to participate during project implementation or monitoring. This was a factor outside of our control and identified in our original lograme.

### **3.3 Monitoring of assumptions**

Outcome and Output level assumptions were monitored throughout project implementation as these were critical to ensuring that the project remained on track. As conditions changed over the course of the six-year project, we updated assumptions within the lograme (using appropriate Change Requests).

As previously mentioned, impacts of the pandemic required us to closely monitor access to Ulithi Atoll and to institute thoughtful measures to ensure project staff did not infect the community with COVID-19. Island Conservation and project partners were diligent about honouring the community's requests to delay returning to the Atoll an additional year after the rest of the world was beginning to normalize international travel. This proved to be the right



decision since the community on Ulithi was not exposed to COVID until the tail-end of the pandemic. Because the narrow window for implementing the eradication depended on both meteorological and social factors (e.g., the timing of cultural events), the partnership had to make timely decisions about proceeding with the implementation from one year to the next. This led us to working extremely closely with the partners to reach these decisions with enough time to mobilize staff and resources and to circulate information with key stakeholders.

Based on project outcomes and our constant monitoring of community support for the project, it is clear that the expected short-term changes are being realized and that there is a hunger for additional eradications within Ulithi Atoll (see Section 2). Moreover, this project has paved the way for the long-term changes that we expected to provoke, with baseline monitoring and region-appropriate methods applicable to future similar projects.

### 3.4 Impact

Our original anticipated impact was for “Recovery of native and endemic biodiversity and improved food security [to increase] the community’s resilience to climate change and inspires further action to restore and protect FSM’s unique biodiversity.” This project has safeguarded a critical sea turtle nesting ground and has paved the way for recovery of the endemic Ulithi blind snake. It has also restored conditions for the recovery of critical nutrient pathways facilitated by seabirds and land crabs. We have already seen positive changes in land crab populations and there has been no observed sea turtle nest depredation. Although we never expected the recovery of the blind snake or seabird populations to occur during the life of the project, there is strong precedent for this to happen in the coming five to ten years. The project also helped unlock substantial co-funding related to biodiversity of the marine environment and reef health. Two core objectives of those grants are (1) to establish how the invasive species eradications impact nearby coral reef health, and (2) to create and implement marine resource management best practices. This work is critical to the Ulithi communities which rely on subsistence fishing for their well-being. Moreover, the project triggered great pride in the community, as well as a desire to share the skills and experience gained through this project more broadly within Micronesia.

This project has never been framed in terms of ‘poverty alleviation.’ Our conversations and planning in the context of this project made it clear that the people of the outer islands and Ulithi, in particular, do not consider themselves ‘impoverished.’ That concept has connotations that are not conducive to understanding issues in these islands that Westerners might perceive as poverty and gender inequity. However, the community members do articulate what it means to them to feel secure, which for them involves food, environmental, and social security. Thus, we have modified the impact from ‘poverty alleviation’ to ‘promoting wellbeing,’ as articulated by the community. We expected the communities of Ulithi to benefit from increased food which would, in turn improve their wellbeing. The re-establishment of healthy gardening islands with abundant natural resources will allow the community to resume critical gardening (agriculture) and natural resource harvesting activities. The resumption of these activities not only makes these communities more self-sustaining, but also allows them to shift their reliance on rice and imported goods to healthier, more traditional foods—a shift which the community embraces and has been seeking to affect. Finally, in terms of inspiring further action to restore and protect their unique biodiversity, there is no greater proof of that than their continued partnership to eradicate invasive species from yet more islets in Ulithi atoll—for the benefit of biodiversity and their own wellbeing.

## 4 Contribution to Darwin Initiative Programme Objectives

### 4.1 Project support to the Conventions, Treaties or Agreements

Of the targets adopted in late 2022 by the Kunming-Montreal Global Biodiversity Framework, we see four main targets that will benefit from our work in Ulithi:

**TARGET 6:** *Eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services by identifying and managing pathways of the*



*introduction of alien species, preventing the introduction and establishment of priority invasive alien species, reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 percent, by 2030, eradicating or controlling invasive alien species especially in priority sites, such as islands.*

This project eliminated invasive species on islands and contributed to managing alien species invasion pathways.

**TARGET 11:** *Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services, such as regulation of air, water, and climate, soil health, pollination and reduction of disease risk, as well as protection from natural hazards and disasters, through nature-based solutions and ecosystem-based approaches for the benefit of all people and nature.*

We jumpstarted agroforestry on Ulithi and restored ecosystems, thereby enhancing the community's resilience to climate change and natural hazards.

**TARGET 20:** *Strengthen capacity-building and development, access to and transfer of technology, and promote development of and access to innovation and technical and scientific cooperation, including through South- South, North-South and triangular cooperation, to meet the needs for effective implementation, particularly in developing countries, fostering joint technology development and joint scientific research programmes for the conservation and sustainable use of biodiversity and strengthening scientific research and monitoring capacities, commensurate with the ambition of the goals and targets of the framework.*

Island residents enhanced their capacity to prevent the spread of invasive species and managed some of the most damaging species present across their islands.

**TARGET 22:** *Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making, and access to justice and information related to biodiversity by indigenous peoples and local communities, respecting their cultures and their rights over lands, territories, resources, and traditional knowledge, as well as by women and girls, children and youth, and persons with disabilities and ensure the full protection of environmental human rights defenders.*

We worked to ensure that women, their needs, and the critical role they play in gardening and food production is brought to the forefront in conversations around reinstating gardening on Loosiep.

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 two 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 fskito advance implementation of its NBSAP.

## 4.2 Project support for multidimensional poverty reduction

See Section 3.4 for further details.

This project paved the way for enhancing food security and community resilience for Ulithi's 1,000 residents spread among four adjacent islands (Mogmog, Falalop, Asor, and Federai). Both indirect and direct benefits are expected to accumulate for the Ulithi communities.

While immediate poverty reduction was not realized within the project period of performance, we expect that within the next 12-24 months, significant gains will be made as the islands recover from drought conditions, gardens flourish, and the monitor lizard population is eliminated. The five gardens will be complemented by additional crop varieties that will then be distributed and traded between the communities (direct benefits).

Because the traditional role of Falalop (which holds ownership of Loosiep) and Asor is to provide and trade crops in exchange for seafood from the neighbouring islands Mogmog and Federai (which have access to the best fishing), once gardens are established and recover from the drought the increased supply of land-based food will strengthen socio-economic ties for the Falalop and Asor communities by increasing their ability to trade (indirect benefits). This will strengthen the traditional systems on these islands, especially those under leadership of women and girls (gardening and land-based food), with approximately 500 women and girls benefiting (indirect benefits).

From a knowledge transfer and awareness raising perspective (indirect benefits), the community now also benefits from greater expertise and know-how in invasive species management and awareness of community resilience. With greater autonomy in invasive species management and biosecurity, the Ulithi community has the tools to improve the health of their community (i.e., the removal of rats can permit the planting of nutritious foods, reduce presence of zoonotic disease), safeguard their natural resources from future invasions, and take steps towards the sustainable use of their home islands. Community workshops have led to a better understanding of a values system rooted in traditions and practices that sustain people, their environment, and their health and has led them to take steps to improve resource management through a socially inclusive structure and process.

## 4.3 Gender Equality and Social Inclusion (GESI)

|  |     |
|--|-----|
| Please quantify the proportion of women on the Project Board <sup>1</sup> .  | 33% |
| Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women <sup>2</sup> . | 66% |

| GESI Scale               | Description  | Put X where you think your project is on the scale |
|--------------------------|--|--|
| <b>Not yet sensitive</b> | The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach |  |

<sup>1</sup> A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

<sup>2</sup> Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

|                       |  |   |
|-----------------------|--|---|
| <b>Sensitive</b>      | The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities. |   |
| <b>Empowering</b>     | The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups  | X |
| <b>Transformative</b> | The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change   |   |

Because the Ulithi society is traditionally male-dominated, the project might be classified as gender-empowering. In order to achieve project approvals, one must pass through the traditional government structures which are made up exclusively of males. However, we found ways to ensure that women could be included in other project aspects:

- We actively recruited females to collect natural resource and wellbeing survey data and participate in field operations. Women only assumed the roles of data collection, however.
- We were very careful in planning our community meetings to ensure that meeting times coincided with times when women have greater availability.
- We also held meetings with just women and girls to ensure that they had greater opportunities to be heard.
- We ensured we had a 50% male:female participation ratio in the youth groups.
- We sought to achieve a 50% male:female participation in adult meetings and workshops. (We achieved a 50.8%:49.2% male:female participation).
- Many of the surveys were 'taken' by primary heads of household, who are mostly men. Thus, we performed a cross validation with women to ensure that women's views and experiences were also captured.

We did not see any evidence that women or other marginalised groups were negatively impacted.

By providing the women of Falalop with greater opportunities to participate in the local economy, we helped improve their social standing and active contribution. Food security, similarly, is an issue; when food is scarce, the burdens of cooking and providing for the household are disproportionately shifted towards women. By improving the overall health of the island ecosystems, our project helps alleviate a social pressure that causes gender inequity and social stratification.

We were encouraged to see that continued planning within the community explicitly includes women and youth (see management planning mentioned in Section 3.1) and we believe that this project helped foster such inclusive community interactions.

Of note, this project was designed when gender-equity was a priority; it is only recently that social inclusion has become a priority for the Darwin Initiative. As such, social inclusion (beyond youth demographics) was not part of the project design from the outset.

#### **4.4 Transfer of knowledge**

This award permitted the development, trialling and implementation of never-before used monitor lizard eradication techniques. We had hoped to use the information gleaned from this experience to publish a peer-reviewed manuscript, but COVID and the three-year delay prevented us from realizing this goal. While we still have the ambition of creating a formal publication about the monitor lizard eradication, it was not possible to achieve before the close of this award. We did, however, generate a suite of unpublished reports on methods and interim project outcomes, which will inform future projects in Yap, FSM, or the region for this invasive species. Further, the local project participants (project trainees) are in a position to participate in or support future monitor lizard, pig, or rodent eradications. It is equally important to acknowledge that this project included the first ever successful rat eradication in Yap state, FSM. The skillset transferred to the local community through a structured series of trainings, field trials and the implementation of the operation has significantly increased the capacity for future eradications and invasive species management projects on Ulithi. Furthermore, the confirmation of a successful rodent eradication achieved by local team has established a new precedent for the outer islands of Yap and FSM for what is achievable from grassroots, community driven approach to conservation and land stewardship on the landscape level.

Although no policy changes have been put in place at the national level, the overwhelming support that we received for our recent funding application from the Governor of Yap, the State Legislature, and the Yap State Department of Resources and Development (evinced by letters of support, available upon request), indicates that the profile of invasive species eradication as a nature-based solution is gaining traction within the country and the state.

#### **4.5 Capacity building**

Magul “John” Rulmal, UFCAP Officer and OPOR Board Member, gained immense confidence and experience in project management and eradication. He applied to a Regional Project Partnership position with an international conservation organization, with this project’s success providing evidence of his suitability for the role. His candidacy advanced to the final round, but he was unfortunately not selected for the job. The overwhelming support that UFCAP and IC received for future eradication work in Ulithi (see section 4.4) demonstrates that UFCAP’s reputation has been amplified through this work. As the partnership continues to elevate UFCAP’s profile through this and future projects, we hope that it will soon be regarded as an international leader in island ecosystem restoration. Since the inception of this project, Magul has been asked to represent Ulithi and present on biosecurity and terrestrial management of invasive species on outer islands to the Yap State legislature and the APIL (Association of Pacific Island Legislatures, demonstrating his recognition by others as a leader in this field.

While OPOR is not an in-country, locally-based partner, they are heavily involved with the Ulithi community and will continue to work there to achieve inclusive, adaptive, & sustainable conservation solutions to protect the health & resilience of critical coral reefs marine habitat & the people who rely on them for food security. Over the course of this grant, they became a registered charity, enhancing their access to funds and their support of UFCAP, the local community, and emerging groups (e.g., Ulithi Hofagie Wa’gay and YOU). This increased institutional capacity signals future growth for this grassroots organization and increased recognition of their expertise.

### **5 Monitoring and evaluation**

Modifications to the logframe revolved around the need to modify the timing of expected outcomes given our three-year delay in implementing the project. No other substantive changes were made to the log frame.

The logical framework served as our primary tool for evaluating real project progress and served as a regular topic of conversation with our partners. Due to the isolation of the Ulithi community during the global pandemic, it proved challenging to include them in M&E

conversations, but the logframe served as a valuable tool for restarting and continuing conversations about how to complete the project.

For IC, OPOR, and UFCAP, the log frame, especially the activity list, served as a checklist of deliverables. It is important to note that the benefits of eradication projects are longer-term than the scope of this grant and project. The methods and the baseline data developed for this project allow for the evaluation of long-term impacts at any point in the future. The measurable indicators established at the onset of the project will continue to be relevant for the Ulithi community in future years, particularly as we continue to partner with them on other grants.

## **6 Lessons learnt**

The fact that the partnership was successful in implementing the project after three full years of delays is a testament to its strength and its connection to the people of Ulithi. We found that it is vital to take time to establish trust with local partners; interacting in-person with community leaders as a means of building and bolstering relationships is invaluable.

Through the process of validating the results of the wellbeing survey, we learned a critical lesson about formulating questions for a community that do not conform to Western, capitalistic societal structure. We would recommend that any survey with a preconceived idea, such as the concept of 'poverty,' be carefully vetted in a cultural context. We thought we had done a good job of having the community lead with many of the questions, but we realized that some questions were nevertheless misinterpreted. This can have an important and consequential impact on the interpretation of data, which can translate into a misunderstanding at best, or an inappropriate allocation of resources at worst. A good example of this is the concept and use of 'income' as discussed previously. We have built this learning into future interviews and focus groups throughout our portfolio of work.

## **7 Actions taken in response to Annual Report reviews**

We have shared last year's and all annual reviews with partners.

We have responded to all actionable issues from the prior years' reports. Our 2023 review requested that we respond to the following in our next annual report:

- It would be good to hear more about the methods being used in the eradication of these 3 species. There is talk of rat poison but otherwise the methods are barely discussed. Darwin has funded a number of similar projects on similarly remote islands and a lot has been learned about their effectiveness.
  - Due to constraints on space and this template's explicit request that we not detail activities, we did not provide this level of detail. We are attaching our operational plans/reports as annexes. Our methods follow both eradication best practices and eradication principles.
- Secondly, the challenges of gender in garden tending are potentially a long-term threat to the intended outcome of this project. How confident are you that gardening will make a significant return on Loosiep?
  - The speed with which the people of Ulithi resumed gardening on Ulithi Loosiep (within 5 months), the excitement that they expressed at being able to garden without suffering the ravages of invasive species, and the number of food crops that they opted to start growing point to a real interest in the community to capitalize on this project and re-vitalize Loosiep as a gardening island. There are currently plans for the women of Loosiep to visit this (boreal) summer and begin gardening in earnest. This trip has been delayed due to the ongoing ENSO event and the drought conditions this provokes in FSM. We are confident that women, especially, will continue to benefit from the re-establishment of food gardens on Loosiep.
- Was the in-person training undertaken in Hawaii funded by Darwin? If so could more information be provided as to who attended, how many people were engaged and what sort of training/engagement they were provided with?

- This was a summer youth activity programmed for 2022 because COVID was still preventing us from working in Ulithi. This program was funded by OPOR though other funding sources but allowed us to meet some of our Darwin Initiative objectives (e.g., invasive species awareness raising and biosecurity). We brought youth from Ulithi as well as invited Ulithi youth living on Hawaii Island, and youth from California. There were 14 youth in attendance, 7 male and 7 female. We conducted trainings and discussions around: marine monitoring, water quality, invasive species and biosecurity, cultural practices, music creation (with an ocean management theme). This achieved a 50:50 ratio of men and women, with the teaching/leadership team consisting of 2 women and 1 man.

## **8 Sustainability and Legacy**

Benefits post-project will continue to accrue, as long as the community continues to apply biosecurity protocols. We anticipate the recovery of natural resources to continue (crab, reptile, and seabird populations increase) and for sea turtle nesting to persist unimpeded, permitting this threatened species to increase incrementally. As the food gardens take root and crops flourish, we expect all the communities of Ulithi to experience greater access to healthy foods and greater food security.

The local community members who were employed as part of the eradication plan to use their newly cultivated skills to undertake additional eradications and island restoration projects within Ulithi Atoll. With the support of the community, Island Conservation has just submitted a grant application to make additional island restorations a reality in Ulithi (see Section 2). The clans that traditionally manage Loosiep will continue to steward the camping and storage structure we established, which will serve them as they harvest and tend to their newly planted crops. The monitor lizard eradication team has supplies and tools to continue follow up work and if sufficient funds are available, Loosiep will be the first ever monitor eradication.

Ulithi is setting the precedent to the other outer islands of Yap for terrestrial management of invasive species through eradication and biosecurity. This is already apparent and scoping trips are planned for June 2024 to a nearby atoll to evaluate the feasibility of eradicating rats and monitor lizards. It is our sincere hope that Island Conservation can continue to support these efforts leading to a community driven program of work across FSM—a legacy that the Darwin Initiative should be proud of.

## **9 Darwin Initiative identity**

The Darwin Initiative funding was matched with significant co-funding. As such, it formed part of a larger programme. We recognized the UK government's support via the Darwin Initiative in our recent press release announcing success of the rat eradication (see attachment) and in all related communications, including blog posts and web pages. Each time we mention the project on our website or in newsletters, we include links back to the Darwin Initiative's website to increase awareness. We have flourishing social media accounts with tens of thousands of followers (X, Instagram, Facebook, LinkedIn) and link to the Darwin Initiative often. Our promotion of the Darwin Initiative has come in the form of thanks for its support and the certainty that the project would not have been possible without its funding.

## **10 Risk Management**

No new risks have emerged since last year.

## **11 Safeguarding**

|  |                                     |
|--|-------------------------------------|
| Has your Safeguarding Policy been updated in the past 12 months?   | No                                  |
| Have any concerns been investigated in the past 12 months  | No                                  |
| Does your project have a Safeguarding focal point?   | No                                  |
| Has the focal point attended any formal training in the last 12 months?  | No                                  |
| What proportion (and number) of project staff have received formal training on Safeguarding?   | Past: 100% [6]<br>Planned: 100% [6] |
| Has there been any lessons learnt or challenges on Safeguarding in the past 12 months?<br>Please ensure no sensitive data is included within responses.<br><b>No</b>       |                                     |
| Please describe any community sensitisation that has taken place over the lifetime of the project; include topics covered and number of participants.<br><b>No</b>         |                                     |
| Have there been any concerns around Health, Safety and Security of your staff over the lifetime of the project? If yes, please outline how this was resolved.<br><b>No</b> |                                     |

## 12 Finance and administration

### 12.1 Project expenditure

| Project spend (indicative) since last Annual Report | 2023/24 Grant (£) | 2023/24 Total actual Darwin Initiative Costs (£) | Variance % | Comments (please explain significant variances) |
|---|-------------------|--|------------|---|
| Staff costs (see below)                             |                   |  |            |   |
| Consultancy costs                                   |                   |  |            |   |
| Overhead Costs                                      |                   |  |            |   |
| Travel and subsistence                              |                   |  |            |   |
| Operating Costs                                     |                   |  |            |   |
| Capital items (see below)                           |                   |  |            |   |
| Others (see below)                                  |                   |  |            |   |
| <b>TOTAL</b>  |                   |  |            | 82,331  |

|                       |             |
|-----------------------|-------------|
| <b>Staff employed</b> | <b>Cost</b> |
|-----------------------|-------------|



| (Name and position) | (£)           |
|---------------------|---------------|
| Jesse Friedlander   | [REDACTED]    |
| Jose Herrera        |               |
| Thomas Hall         |               |
| <b>TOTAL</b>        | <b>25,372</b> |

| Capital items – description | Capital items – cost (£) |
|-----------------------------|--------------------------|
|                             |                          |
| <b>TOTAL</b>                |                          |
| Other items – description   | Other items – cost (£)   |
| Project Audit               | 3,000                    |
| <b>TOTAL</b>                | <b>3,000</b>             |

## 12.2 Additional funds or in-kind contributions secured

| Matched funding leveraged by the partners to deliver the project                   | Total (£)      |
|--|----------------|
| North Pacific Development Fund (New Zealand ministry of Foreign Affairs and Trade) | [REDACTED]     |
| United States Department of the Interior, Office of Insular Affairs                |                |
| United States Fish and Wildlife Service  |                |
| <b>TOTAL</b>   | <b>487,480</b> |

| Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project | Total (£)      |
|--|----------------|
| United States Department of the Interior, Office of Insular Affairs (unconfirmed)  | 240,984        |
| <b>TOTAL</b>   | <b>240,984</b> |

## 12.3 Value for Money

We believe that we provided excellent value for money. We were capable of leveraging Darwin Initiative funds to raise another [REDACTED]—a 140% match in funding. Moreover, this additional funding contributed to the sustainable use of marine resources, further amplifying our impact on wellbeing and increased food security (i.e., tackling local foods sources from land and sea). Our unique position as a global leader in eradications allowed us to bring together some of the best experts to thoughtfully design, review, and execute a monitor lizard eradication—a world first. Moreover, we were able to deliver a third invasive species eradication—the pig eradication—at no added cost, demonstrating our efficient use of funds and in-kind resources from partners. In

an effort to achieve a maximum of results with available resources, we were careful in our use of funds during the three years of delays that the project experienced. Project delays inevitably increase project costs. We considered prioritizing the swift delivery of eradication outcomes and opting for a Zoom-based eradication implemented by UFCAP without any onsite involvement from IC, but this would have put our ability to develop true capacity (through hands-training/mentoring) and ensure the highest level of project advising (through in-person eradication leadership) at risk. We opted to prioritize capacity development and outcome achievement (best feasible project) rather than settling for just a “good project” that was completed more quickly. In making this choice, we believe we earned better value for money than we would have with a remotely conducted eradication because this investment will pay dividends in future eradications in the region.

### **13 Other comments on progress not covered elsewhere**

We made a minor adjustment to our survey goals. Whereas we had originally envisaged a Household Food Consumption Survey, this was expanded into a more holistic understanding of community values of, priorities for, and perceptions of threats to their natural resources, culminating in a Household Questionnaire and the *Ulithi Atoll Household Gardening Calendar and Wellbeing Survey Results*.

We request that the Darwin Initiative refrains from sharing the *Ulithi Atoll Household Gardening Calendar and Wellbeing Survey Results* (provided as supplementary material) outside of its review committee as it may contain sensitive information. Please reach out to One People One Reef if you have any questions or need permission from the community to share more broadly.

### **14 OPTIONAL: Outstanding achievements of your project (300-400 words maximum). This section may be used for publicity purposes.**

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

## Annex 1 Report of progress and achievements against logframe for the life of the project

| Project summary  | Progress and achievements   |
|--|---|
| <p><b>Impact</b></p> <p>Recovery of native and endemic biodiversity and improved food security increases the community's resilience to climate change and inspires further action to restore and protect FSM's unique biodiversity.</p>  | <p>Thanks to this Darwin Initiative award, the partnership has set the communities of Ulithi on a path to enjoying greater food security, enhanced well-being, heightened resilience to climate change, and improved natural resources and biodiversity. This project and the outcomes observed thus far have provoked a strong desire from the communities of Ulithi to continue removing invasive species from their islands so that they can resume gardening, recover their native biodiversity and lead healthier, more sustainable lives.</p> |
| <p><b>Outcome</b></p> <p>Removal of harmful invasive species will result in native and endemic species recovery and improved conditions for horticulture, resulting in increased food security for the community.</p>  | <p>We have successfully removed two invasive species; a third is at nearly undetectable levels and outside funding sources should allow us to continue removing individuals as they appear. Native species show signs of recovering and the community has recommenced horticulture.</p>   |
| <p>0.1 No invasive vertebrates remain on Loosiep by the end of the project.</p>  | <p>0.1 Only a small number of invasive monitor lizards remain on Loosiep; rodents and feral pigs have been eliminated.</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>0.2 We collected pre-eradication baseline data, but do not expect to see immediate changes in seabird numbers. Anecdotal observations suggest seabirds are beginning to use Loosiep again. Both crab and native reptile populations are showing either signs of recovery or populations similar to nearby islands without invasive vertebrates. No sea turtle nest depredation was observed in the latest nesting season (June 2024).</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>0.3 Five food crops were planted across Loosiep. Unfortunately, drought conditions limited growth and no crops had been harvested on Loosiep as of this writing. The community continues to regularly tend and replant these gardens. We expect that as much as 75% of the community will have greater access to food once gardens become productive.</p>  |
| <p>0.4 Local and national capacity to plan, implement and monitor invasive species eradication and biosecurity programmes is raised for 10 people by</p>   | <p>0.4 We exceeded our expectations of creating local capacity. The UFCAP team of over 10 individuals did an outstanding job of implementing the pig, rodent, and monitor lizard eradications. Unfortunately, government agencies were unable to allocate staff for participation in the 2023</p>   |

|  |  |
|--|--|
| the project end date as measured by a pre-and post-skills assessment. See Output 4 for additional specific measures.   | eradication or subsequent monitoring trips. The skills assessment shows an average improvement in implementation skills of 509% (see Supplementary Material 3).  |
| <b>Output 1</b>  |  |
| Invasive vertebrates (rodents and monitor lizards) removed from Loosiep, with biosecurity in place to prevent reinvasion.  |  |
| Output indicator 1.1 No rats remain on Loosiep island by end of year 5   | 1.1 No rats remain on Loosiep island.  |
| Output indicator 1.2 No monitor lizards remain on Loosiep island by project end date.  | 1.2 A small number of monitor lizards remain on Loosiep island.  |
| Output indicator 1.3 Biosecurity protocols are in place prior to project implementation and followed by local island users.  | 1.3 Biosecurity protocols were in place prior to project implementation and continue to be followed by local island users.   |
| <b>Output 2. Native biodiversity recovery on Loosiep Island.</b>   |  |
| Output indicator 2.1. By 2023, sea turtle nest predation by invasive vertebrates is eliminated (reduced from: 80-100% of nests predated currently, to zero predated by project end).   | 2.1 No sea turtle nest depredation was observed during the latest nesting season (June 2024).  |
| Output indicator 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. | 2.2 Baseline measures of abundance were collected in 2020. These formal surveys provide evidence that no seabirds nest on Loosiep; surveys can be repeated in 5-10 years (outside the scope of this award).  |
| Output indicator 2.3 A baseline pre-eradication habitat assessment for the blind snake is completed and can be repeated 5 years post-eradication.  | 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. Surveys can be repeated in 5 years (outside the scope of this award). |
| Output indicator 2.4 Local staff trained in monitoring protocols in year 1; Baseline surveys completed pre-eradication; post eradication survey completed 1 year after implementation  | 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.          |
| <b>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.</b>   |  |

|  |  |
|--|--|
| Output indicator 3.1 Horticulture is resumed on Loosiep, with 5 gardens planted by end of 2023.  | 3.1 Horticulture on Loosiep resumed in 2023; five gardens (crops) were established.  |
| Output indicator 3.2 The subsistence economy is strengthened by increased trade and sharing of resources between islands by end of 2024.   | 3.2 Unfortunately, time and weather conditions did not permit harvesting to happen prior to reporting; we could not to quantify this metric. Thanks to this project, however, the community has begun drafting a management plan that will incorporate elements of trade and garden products, providing a mechanism for the sharing or resources and structured trading.   |
| Output indicator 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 2024. | 3.3 Unfortunately, time and weather conditions did not permit harvesting to happen prior to reporting; we could not to quantify this metric. However, thanks to this project, over 80% of the community has a better understanding of a values system rooted in traditions and practices that sustain people, their environment, and their health—including healthy foods. |
| Output indicator 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 2023-2024.   | 3.4 Women helped shape the gardening plan for Loosiep and supported in the collection of seedlings/propagules for reestablishing gardens on Loosiep. Women (youth, adult, and elderly) will continue to play an established role within a newly formed management committee: Ulithi Hofagie Wa’gay   |
| <b>Output 4.</b> Community capacity developed: The local community, Yap State, and National (Federated States of Micronesia) capability to plan and implement invasive species eradication and biosecurity projects is advanced.     |  |
| Output indicator 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 during the eradication.                 | 4.1 In addition to individuals originally trained in 2019 (Year 1) and 2020 (Year 2), 10 local staff were trained in invasive species detection and monitoring and employed in the eradication and confirmation (2023). Their skills improved approximately 509% on average (see Supplementary Material 3).  |
| Output indicator 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.                                    | 4.2 The council of Chiefs was brought into the planning process at the onset of the project and continued 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 in 2020; this letter was re-issued in 2022.  |
| Output indicator 4.3 At least 2 people from the Yap State government and 1 person from the FSM government participate in the eradication.  | 4.3 Unfortunately, no government representatives were able to participate during the 2023 eradication, though they were in strong support of the   |

|  |  |
|--|--|
|  | project and pledged continued support of future invasive species eradication projects in Ulithi.   |
| Output Indicator 4.4. In year two, women participate in the operational teams. Girls participate in the youth groups, with a 50% male: female participation ratio.                     | 4.4 Women participated in preparing Loosiep for receiving new gardens. We achieved a 50% male: female participation ratio in our youth groups and workshops.   |
| Output indicator 4.5 Community workshop is completed to highlight biosecurity risks and provide training on effective biosecurity that includes quarantine, surveillance and response. | 4.5 Community workshops to highlight biosecurity risks have been completed and the community has a strong understanding of the need for effective biosecurity. Workshops to define locally appropriate biosecurity measures took place in early to mid-2023 and early 2024 and will inform an atoll-wide plan to be finalized in the future. |
| <b>Output 5.</b> Period of employment is provided for local community representatives.   |  |
| Output indicator 5.1 At least 10 local temporary employees are engaged as part of project implementation.  | Ten local temporary employees were hired for the rat eradication in 2023. Over 35 local staff persons were engaged in field activities between 2019 and 2024.  |

## 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><b>Impact</b> (Max 30 words): Recovery of native and endemic biodiversity and improved food security increases the community’s resilience to climate change and inspires further action to restore and protect FSM’s unique biodiversity.</p> |   |  |   |
| <p><b>Outcome:</b><br/>(Max 30 words)<br/>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</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>Normal travel to Yap State and Ulithi will resume in 2023.</p> <p>Project staff and community are able to manage and mitigate the risks of COVID-19.</p> <p>Local support for the project remains strong, despite a multi-year delay in project implementation.</p> |



|  |  |  |   |
|--|--|--|---|
|  | 10 people by the project end date as measured by a pre-and post-skills assessment. See Output 4 for additional specific measures.  |  |   |
| <b>Outputs:</b><br><b>1. Invasive vertebrates (rodents and monitor lizards) removed from Loosiep, with biosecurity in place to prevent reinvasion.</b> | 1.1 No rats remain on Loosiep island by end of year 2.<br>1.2 No monitor lizards remain on Loosiep island by project end date.<br>1.3 Biosecurity protocols are in place prior to project implementation and followed by local island users.   | 1.1 and 1.2 Detection methods confirm absence of rats and monitor lizards and this information is summarized in a confirmation monitoring report.<br><br>1.3 Biosecurity plan completed. Biosecurity officer appointed by the community. | Rats on Loosiep are susceptible to the same bait and baiting methods that are used on similar tropical islands in the Pacific Ocean.<br><br>The tools and methods available for the monitor lizard eradication will be effective in detecting and removing the last individual. |
| <b>2. Native biodiversity recovery on Loosiep Island.</b>  | 2.1 By end of 2023, sea turtle nest predation by invasive vertebrates is eliminated (reduced from: 80-100% of nests predated currently to zero predated by project end).<br><br>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.<br><br>2.3 A baseline pre-eradication habitat assessment for the blind snake is completed and can be repeated 5 years post-eradication. | 2.1-2.4 Biological monitoring plan completed<br><br>2.1-2.4 Reports produced from monitoring surveys and data analysis.  | Existing programs to monitor coral reef and green sea turtle nesting on Loosiep will continue for the foreseeable future.   |

|  |  |  |  |
|--|--|--|--|
|  | 2.4 Local staff trained in monitoring protocols in year 1; Baseline surveys completed pre-eradication, post eradication survey completed 1 year after implementation.  |  |  |
| 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>3.1 Horticulture is resumed on Loosiep, with 5 gardens planted by end of 2023.</p> <p>3.2 The subsistence economy is strengthened by increased trade and sharing of resources between islands by end of 2024<sup>3</sup>.</p> <p>3.3. 75% of the community (750 individuals) have access to improved food variety and quantity, with an increase in the carbohydrate and nutrient-rich plant-based foods necessary for a healthy diet by end of 2024.</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 2023 -2024.</p> | <p>3.1 Survey documenting # new gardens planted. Crop yield measured and logged as crops are harvested.</p> <p>3.2 Focus groups and written surveys completed in year 1 (baseline) and at the completion of the project (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 at the completion of the project. Significant long-term changes are expected after crops become established.</p> | No unusual or severe weather events inhibit ability to complete project or grow crops. |

<sup>3</sup> The traditional role for nearest inhabited islands of Falalop (80 households) and Asor (12 households) is to provide and trade crops in exchange for seafood from the neighbouring islands Mogmog and Federai. Increasing supply of land-based food will strengthen socio-economic status for the Falalop and Asor communities by increasing ability to trade. This will in turn, increase variety of food available on all islands.

|  |  |   |  |
|--|--|---|--|
|  |  | 3.4 Record of community meetings and focus group surveys with women.  |  |
| <p><b>4. Community capacity developed:</b><br/>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 during the eradication..</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.</p> <p>4.4. During the rodent eradication, women participate in the operational teams. Girls participate in the youth groups, with a 50% male:female participation ratio.</p> <p>4.5 Community workshop is completed to highlight biosecurity risks and provide training on effective biosecurity that includes quarantine, surveillance and response.</p> | <p>4.1 Pre and post training assessments conducted by IC field manager(s) to measure participants' change in knowledge as a result of training workshops and participation in the project. The assessment will be standardized, and results will be documented. To measure employment: Records will be maintained detailing name, level of employment, and compensation.</p> <p>4.2 The Chiefs approve the eradication plan and sign a letter of endorsement prior to the commencement of the eradication.</p> <p>4.3 Records kept of individuals participating in community and stakeholder meetings; meeting minutes collected.</p> <p>4.4. Records of individuals participating in project, disaggregated by age and gender.</p> <p>4.5. Workshop attendance certificates.</p> | <p>Trained persons remain engaged and motivated to pursue further work in conservation projects when opportunities are available.</p> <p>The Council of Chiefs agrees with the proposed methods for the project. Based on the scoping trip completed in March 2017, and a letter of support received for the project, preliminary support is in place from local community leaders.</p> <p>FSM Government has the capacity to task someone to participate in part of the project's implementation.</p> |

## Annex 3 Standard Indicators

**Table 1 Project Standard Indicators**

Darwin Initiative standard indicators have evolved since this project was initiated. We have done our best to identify the most relevant standards for reporting. For those newly adopted standards that were not previously being tracked by the project, we have left information blank (-) for previous years but continued to track progress against those indicators.

| DI Indicator number | Name of indicator using original wording  | Name of Indicator after adjusting wording to align with DI Standard Indicators   | Units                   | Disaggregation                         | Year 1 Total | Year 2 Total | Year 3 Total | Year 4 Total | Year 5 Total | Total to date | Total planned during the project |
|---------------------|---|--|-------------------------|--|--------------|--------------|--------------|--------------|--------------|---------------|----------------------------------|
| DI-A01              | 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 during the eradication. | Number of people from Ulithi communities who have completed training on invasive species eradications and/or turtle database management. | People                  | Females obtaining database training    | 0            | 1            | 0            | 0            | 0            | 1             | 1                                |
|                     |   |  |                         | Females obtaining eradication training | 1            | 5            | 0            | 0            | 0            | 5             | 2-5                              |
|                     |   |  |                         | Males obtaining database training      | 0            | 1            | 0            | 0            | 0            | 1             | 1                                |
|                     |   |  |                         | Males obtaining eradication training   | 10           | 20           | 0            | 0            | 5            | 35            | 10-15                            |
| DI-A03              | UFCAP has improved eradication and biosecurity capability and capacity as a result of project.  | Number of local organisations with improved eradication and biosecurity capability and capacity as a result of project.                  | Number of organisations | Local organisation                     | -            | -            | -            | -            | 0            | 1             | 1                                |
| DI-A06              | Field shelter on Loosiep and supplies used for project including  | Number of people with access to infrastructure and tools on Loosiep for  | People                  | Ulithians                              | -            | -            | -            | -            | 0            | 150           | 150                              |

|        |   |  |                         |   |   |   |   |   |    |    |    |
|--------|---|--|-------------------------|---|---|---|---|---|----|----|----|
|        | (radios, trapping supplies, tools and general field equipment) will benefit the community   | undertaking gardening activities.  |                         |   |   |   |   |   |    |    |    |
| DI-A07 | At least 2 people from the Yap State government and 1 person from the FSM government participate in the eradication.                            | Number of government institutions/departments in Yap State and/or FSM with enhanced awareness and understanding of biodiversity and associated poverty issues. | Government institutions | Yap (state-level) government department               | - | - | - | - | 0  | 0  | 2  |
|        |   |  |                         | National government departments                       | - | - | - | - | 0  | 0  | 1  |
| DI-B02 | Eradication operational plan  | Invasive species management plans available and reviewed by external advisors.   | Number                  | Invasive species management plan: for rodents         | 0 | 1 | 0 | 0 | 0  | 1  | 1  |
|        |   |  |                         | Invasive species management plan: for monitor lizards | 0 | 1 | 0 | 0 | 0  | 1  | 1  |
| DI-B04 | Horticulture is resumed on Loosiep, with 5 gardens planted by end of 2023.  | Number of gardening plans to promote sustainable livelihoods and wellbeing from gardening on Loosiep.  | Number                  | Gardening plan  | - | - | - | - | 0  | 1  | 1  |
| DI-C01 | Biosecurity protocols are in place prior to project implementation and followed by local island users.  | Number of biosecurity best practice guides and knowledge products published and endorsed.  | Number                  | Biosecurity protocols                                 | - | - | - | - | 1  | 1  | 1  |
| DI-C14 | The Council of Chiefs and landowners on Ulithi are involved in the planning, implementation and monitoring stages of the eradication throughout | Number of Council of Chiefs and other island leaders attending briefing events.  | Number                  | Local leaders   | - | - | - | - | 14 | 14 | 14 |

|        |   |   |          |                                     |   |   |   |   |   |    |     |
|--------|---|---|----------|-------------------------------------|---|---|---|---|---|----|-----|
|        | the duration of the project.  |   |          |                                     |   |   |   |   |   |    |     |
| DI-D01 | No invasive vertebrates remain on Loosiep by the end of the project.  | Hectares of habitat managed for invasive species and agroforestry.  | Hectares | Community-owned, non-protected area | 0 | 0 | 0 | 0 | 0 | 18 | 18  |
| DI-D02 | 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 2024. | Number of Ulithians whose disaster/climate resilience has been improved through enhanced food security and wellbeing. | People   | Food security                       | 0 | 0 | 0 | 0 | 0 | 0  | 750 |
| DI-C19 | Finalize one paper on Invasive Monitor Lizards Acetaminophen Toxicity Trial.  | Number of technical publications produced   | Number   | Unpublished report                  | 0 | 0 | 0 | 0 | 1 | 1  | 1   |

**Table 2 Publications**

| <b>Title</b> | <b>Type</b><br>(e.g. journals, manual, CDs) | <b>Detail</b><br>(authors, year) | <b>Gender of Lead Author</b> | <b>Nationality of Lead Author</b> | <b>Publishers</b><br>(name, city) | <b>Available from</b><br>(e.g. weblink or publisher if not available online) |
|--------------|---|----------------------------------|------------------------------|-----------------------------------|-----------------------------------|--|
|              |   |                                  |                              |                                   |                                   |  |
|              |   |                                  |                              |                                   |                                   |  |
|              |   |                                  |                              |                                   |                                   |  |

## **Annex 5 Supplementary material (optional but encouraged as evidence of project achievement)**

1. Ulithi Post-eradication turtle summary (2024)
2. Press Release (2024)
3. Monitor lizard interim eradication report (2024)
4. Field report confirming absence of rats (2024)
5. Post-eradication report on biological monitoring of crabs and reptiles (2024)
6. Field report confirming absence of pigs (2024)
7. Loosiep-Falalop local guidelines and biosecurity template (2024)
8. Skills Assessment (2023)
9. Ulithi Atoll Household Gardening Calendar and Wellbeing Survey Results (2021)
10. Gardening plan (2020)
11. Operation plan for eradication of rats and pigs (2019)
12. Operation plan for eradication of monitor lizards (2019)
13. Loosiep Varanus trial report (2019)
14. Baseline report on sea turtle presence (2019)
15. Baseline report on terrestrial biological monitoring (2019)
16. Ulithi household questionnaire (2018)



## Checklist for submission

|   | Check |
|---|-------|
| Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the <b>correct template</b> (checking fund, type of report (i.e. Annual or Final), and year) and <b>deleted the blue guidance text</b> before submission?   | x     |
| <b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> putting the project number in the Subject line.  | x     |
| <b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> about the best way to deliver the report, putting the project number in the Subject line. All supporting material should be submitted in a way that can be accessed and downloaded as one complete package. |       |
| If you are submitting photos for publicity purposes, <b>do these meet the outlined requirements (see section 14)?</b>   | x     |
| <b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.   | x     |
| Have you involved your partners in preparation of the report and named the main contributors  | x     |
| Have you completed the Project Expenditure table fully?   | x     |
| Do not include claim forms or other communications with this report.  |       |