CEPF Final Project Completion Report

Instructions to grantees: please complete all fields, and respond to all questions, below.

Organization Legal Name	*Sociedade Portuguesa para o Estudo das Aves*
Project Title	*Protecting Threatened and Endemic species in Cape Verde: Phase 1 of a major Island Restoration Project*
CEPF GEM No.	61459
Date of Report	18/01/2016
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CEPF Region: Mediterranean Region, Macaronesian sub-region

Strategic Direction: 1. Promote civil society involvement in Integrated Coastal Zone Management to minimize the negative effects of coastal development in three priority corridors (Southwest Balkans; Cyrenaican Peninsula; and Mountains, Plateaus and Wetlands of Algerian Tell and Tunisia), and in 20 coastal and marine priority key biodiversity areas in other corridors

Grant Amount: US$275,309

Project Dates: 01/01/2013 to 09/30/2015

1. **Implementation Partners for this Project *(list each partner and explain how they were involved in the project)***
   - SPEA – Project coordinator responsible for financial control, technical coordination, reporting and ground operations, cat eradication study and planning and seabird monitoring.
   - Biosfera 1 – Local project leader responsible for ground operations, like seabird protection and monitoring, sea turtle protection and monitoring and communication with local communities. Biosfera 1 was mandated by the Government of Cape Verde to lead conservation initiatives on the marine protected area of Raso, Branco e Santa Luzia.
   - RSPB – Provided technical support for some ground operations, particularly cat control and Santa Luzia habitat restoration studies.
   - University of Cambridge – Was responsible to provide technical support for Razo Lark monitoring and translocation planning.
   - Nature Park of Madeira – Provided technical support and consultation on alien mammal eradications in Macaronesia.

• Pacific Invasive Initiative – Provided technical support and consultation on alien mammal and reviewed an earlier version of the eradication operational plan protocol, providing guidelines for the elaboration of the final plan.

• University of Cape Verde – This partner supplied undergraduate students to take part in some of the relevant turtle studies in Santa Luzia and receive training.
• BirdLife Africa Partnership Secretariat – This partner helped to support Biosfera 1 capacity and aided its development.

Conservation Impacts

2. Describe how your project has contributed to the implementation of the CEPF ecosystem profile

This project helped to promote the civil society involvement in coastal management through the development of the skills of the local environmental NGO, Biosfera 1 and also trough the inclusion of fishermen associations throughout the decision making process. The preparation for the implementation of the management plan was fully inclusive and took in considerations all the regional stakeholders in order to maintain the local livelihoods that depend heavily on the local natural resources
The project helped to raise the capacity of Biosfera 1, a local NGO that is a key partner in the area and the main responsible for all the conservation work done in the Nature Reserve so far. Without all the monitoring and surveillance actions of Biosfera 1 in Santa Luzia Marine Reserve, it was likely that major ecological disasters sometimes irreversible would already had seriously compromised the Reserve. The project provided the tools not only to raise Biosfera's capacity in training and consolidating its staff, organisation rules and governance, equipment and overall capacity, as also supported the major monitoring work in the Reserve for three years.
Santa Luzia is a Key Biodiversity area and its protection status was improved, as it was the knowledge on the biodiversity that it holds. One of the major threats to this reserve is the presence of invasive alien species (cats and mice). During this project a comprehensive operational plan to remove cats from Santa Luzia was prepared and it will allow translocating to this island a population of the globally threatened Razo Lark. It included the evaluation of cat diet and its impacts on the local biodiversity, together with its distribution and habits. The Razo lark is one of the most endangered birds in the world, and since it is highly dependent on rain for breeding it has been heavily affected by clime change. Studies on its biology and close monitoring of its population gathered the necessary information to include in a translocation plan to reintroduce these birds in Santa Luzia, where there it has more adequate habitat available and increase its conservation status. Base reference studies were made about the terrestrial reptile species of Santa Luzia, Branco and Raso that hold several endemics, as well as about the breeding birds on the islands. These reference studies are a strong base for the monitoring of the reserve and will permit to access the impact of the removal of predators and to follow the evaluation of the native populations of birds and reptiles after the implementation of the management plan.
Santa Luzia holds important breeding areas for marine turtles. This project helped to maintain marine turtle nesting areas free of poaching activities, safeguarding more than 500 breeding females and increasing its breeding success.
Raso islet also holds important seabird colonies that were protect by the project team during three breeding seasons. Six seabird species were monitored and its populations studied and populations estimated, while at the same time illegal harvesting of their populations was avoided.
These activities strongly contributed to increase the conservation and protection status of this area while at the same time raising awareness about the values that the area holds. To raise awareness about this priority area, an exhibit was prepared and visited by more than 8000 persons, and a video documentary was prepared and distributed, increasing the knowledge of Santa Luzia and its nature values not only locally, but at a national and international level as well.

3. Summarize the overall results/impact of your project

- Biosfera 1 evolved from a voluntary family-based structure organisation into a fully developed small-scale NGO with a strategy, a functional National Board and supporting members
- The governmental bodies visited the project and got a better perspective of the management necessary and of the conservation work being done
- The government nominated Biosfera 1 as a co-manager of the Santa Luzia Marine Reserve
- A biodiversity baseline situation was prepared for assessing the evolution of the native vertebrate populations in the future
- Terrestrial reptile species, including 3 endemics were surveyed and monitoring protocols prepared
- Breeding birds were surveyed and monitoring protocols prepared
- Seabird breeding populations were estimated and monitoring protocols prepared
- The cat diet and its impact on Santa Luzia biodiversity was accessed
- Mice population abundance was estimated and monitoring protocols prepared
- A cat removal operational plan was prepared
- A restoration plan to the Santa Luzia Marine reserve has been written, including all the preparatory baseline studies and defining future priorities
- Raised awareness about conservation problems among the fishermen communities that use the area
- Raised awareness of general public and school children about Santa Luzia Marine Reserve
- Local fishermen communities were included in a first response network to detect the presence of new alien invasive species
- Local fishermen were included in group discussions and workshops to help develop the management plan and to implement its regulations

Planned Long-term Impacts - 3+ years (as stated in the approved proposal)
List each long-term impact from Grant Writer proposal

- Full recovery and sustainable protection of the habitats and threatened biodiversity of Raso, Branco and Santa Luzia marine protected area, an important biodiversity hotspot in the north Atlantic.

4. Actual progress toward long-term impacts at completion

This project was essential to start implementing the management plan of the Reserve. The seabird populations are now better known and allow a better understanding of the necessary conservation measures do adopt in the future. Biosfera maintained the surveillance camps for seabirds and marine turtles and the three successful breeding seasons of these long lived animals will help their conservation status. An operational plan for cat removal was prepared and the second phase of the project was submitted for funding with the participation of the local authorities.
The work capacity of the local NGO Biosfera 1 increased tenfold and from a small organisation based on volunteer work and struggling daily with financial difficulties, they turned into a small but responsible association with permanent staff, a 3-year strategy and proper financial management. Their work can have a strong impact on the conservation values present in the region, as demonstrated by the decision of the government to appoint them for the co-management of the reserve. Local fishermen associations

were involved in the project activities and participated in workshops to define the future management of the reserve.

Planned Short-term Impacts - 1 to 3 years (as stated in the approved proposal)

1 - Take steps to clear Santa Luzia of invasive cats
2 - Improve the conservation status of endangered bird and reptile species in Raso and Santa Luzia
3 - Involve local fisherman communities in restoration of the protected area and generate sources of income through ecotourism
4 - Increase the capacity of Biosfera 1 for nature conservation.

5. Actual progress toward short-term impacts at completion

The results obtained allowed to apply for funding to manage the worst threats in this marine protected area. These problems include control or eradicate invasive alien species and the lack of surveillance and monitoring of the marine protected area. A comprehensive plan has already been started, in full cooperation with the Cabo Verde Government to address these issues and implement the measures recommended in the management plan.
Cat population was thouroughly studied and its distribution, habits and diet was determined. An operational plan for cat removal was prepared.
The Razo lark population was closely monitored and its survival rate determined Trials on its response to radio-tracking tags and detection possibilities were conducted to allow to follow birds translocated to Santa Luzia in the future.
The terrestrial reptile populations and seabird populations of Santa Luzia, Branco and Raso were surveyed and baseline situations were defined to which compare future population evolution.
Local fishermen communities participated in workshops to better understand the management rules of the reserve and were involved in seabird monitoring activities on Raso.
Biosfera 1 capacity increased in terms of equipment, staff capacity and number and organisational rules and the organisation was appointed by the National Environmental Agency as co-manager of the reserve

6. Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives

The ambitious goals set by this project set against an organisation that was still in the early stages of development and training provided some challenges in implementing basic functioning procedures, while at the same time ambitious and objective results were required. The logistical difficulties to reach the marine protected area with lack of proper travel means and to secure monitoring and surveillance workstations for several months was a permanent challenge that risked compromising the results expected.
The lack of governmental staff and resources from the Nature Reserve of Santa Luzia created several difficulties, since Biosfera has a NGO has a limited field of action and cannot effectively secure surveillance of the Reserve. The gazetting of the Reserve management plan and the appointment of an official director of the Reserve in February 2015 was a major step towards achieving sustainable results in the area.

7. Were there any unexpected impacts (positive or negative)?

Due to the raise in profile of Biosfera 1, a partnership with the Sea Shepherd foundation was initiated and within the scope of that partnership Biosfera 1 managed to secure the use of a large boat that guarantees the regular access to the Nature Reserve raising tenfold the security conditions of the work

team. This was a major positive impact that will reflect on the access to the reserve, the possibility to work on the reserve and even on the surveillance of the area, that was heavily conditioned by the sea state, since the only boat available to Biosfera was a small RIB (Rigid inflatable boat) of 4,5m.

Project Components and Products/Deliverables

Component 1 (as stated in the approved proposal)

Component 1: Prepare for the eradication of the feral cat population from Santa Luzia. Feral cat eradication in Santa Luzia is an important condition for Razo Lark translocation to establish a new population, and for other conservation goals. The removal of cats is also likely to result in the recolonisation of the island by the large seabird populations that once occurred there, plus the recovery and/or reintroduction of terrestrial reptiles. Implemented by SPEA.

- Pre-eradication research - A series of ecological studies necessary to develop the eradication operational plan. This will establish the number, diet, distribution, movements and home range, behaviour, timing of breeding, responses to attractant and response to live traps of cats and establish baseline population estimates of mice, reptiles, birds, insect and flora.
- Operational plan - A comprehensive feral cat eradication operational plan in Santa Luzia will be produced and peer-reviewed by relevant experts.
- Identify potential sources of funding to implement the operational plan and prepare the necessary funding applications.

8. Describe the results from Component 1 and each product/deliverable

A full restoration feasibility report (Appendix 1) was prepared with the information gathered that will be the basis for the Cat eradication and reserve restoration project. The operational plan for cat eradication was prepared and is available (Appendix 2). Pacific Invasive Initiative gave their advice on an earlier version of the plan and provided guidelines for its development. Madeira Natural Park and Cat experts from Canary islands also gave their inputs to the plan.
Applications for the implementation of the operational plan were prepared and a concept project proposal was approved by the MAVA foundation in September 2015 (Appendix 3), while a full proposal is being prepared to submission on January 2016.

1.1 Products / Deliverables

Several ecological studies on cats took place. The islands cat population was estimated at 126 animals (95% CI 87.5 – 189) individuals. Their diet was determined through scat analysis and found to change markedly depending on year conditions (Medina pers. comm.). In 2013 and 2014 the cat diet in Santa Luzia consisted mainly on reptiles that occurred on 91,67% of scats and that consisted on more than 70% of prey items biomass (see Appendix 5).
Cat distribution was determined through the presence of tracks and scats and with the use of motion sensor cameras (Figure 1 and 2). This introduced predator was found widespread trough Santa Luzia and their response to several attractants was measured. The best response was obtained when using tinned sardine (70% positive response, n=17), but some cats were also attracted by smoked lard (66% positive response, n=6) or tinned cat food (50% positive response, n=10).

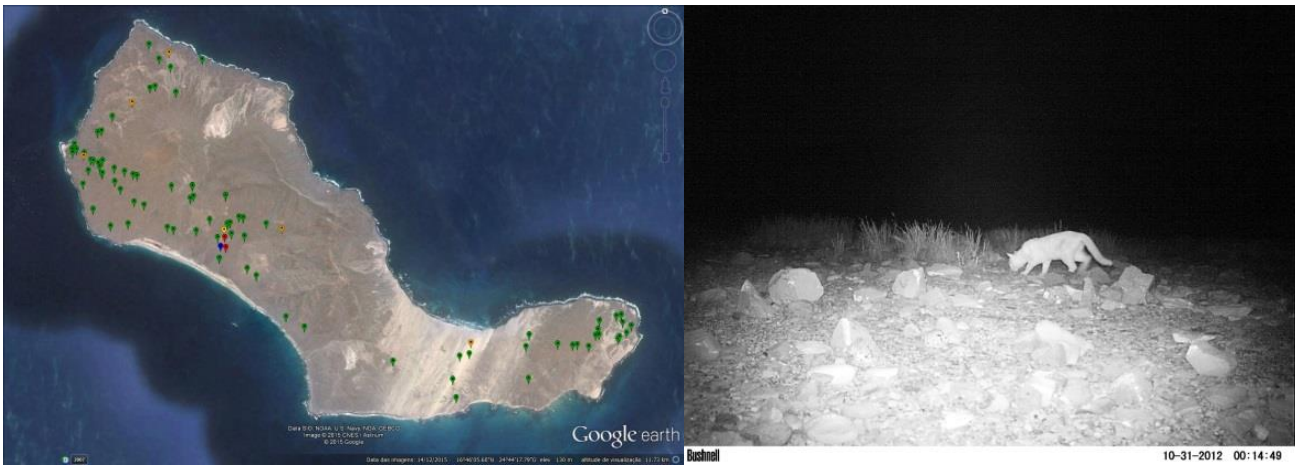

Figure 1: Maps of scats, cat transects and other signs of presence.

Figure 2: Cat detection with trap cameras (detected cats in red, no detection in blue grey)

Mice abundance was determined through capture-recapture methods that were supposed to provide density estimates of the mice population through the use of the Schnabel method. The low number of captures did not allow significant estimates, and so a Abundance indexes (AI) were calculated instead (Cunningham e Moors 1993) based on the number of captures/night/trap.
The maximum abundance index was 0,06 and 0.067 captures/trap/night in February and March respectively. The mean abundance index throughout the year and including all the areas was 0,026. The mice abundances found were substantially inferior from the ones encountered in a preliminary study (AI=0,053) that took place in 2010 in the same area and from, others in similar macaronesian islands, where annual AI varied between 0,29 on Bugio (2006 and 2007) and 0,61 on Ilheú da Cal (2009 and 2011) (Paulo Oliveira *unpublished data*). The local mice population is subject to large variations in

density and abundance due to extreme conditions and occasional meteorological phenomena (temporary floods) as well as lack of food.
Studies on terrestrial reptile distributions and abundance are detailed in appendix 4.
Terrestrial birds were also studied with line transects (fig 3) on Santa Luzia and several species were recorded (fig 4). The most abundant species was *Passer iagoensis* with an abundance index (AI) of 3,21 (present in 58 transects out of 142), *Ammomanes cincturus* was the second most abundant species (AI 0,48), what was a very optimistic result, since that it is the species that has closest ecological requirements to the Razo Lark. Abundance indexes were also calculated for other species *Cursorius cursor* (AI=0,30), *Corvus ruficollis* (AI=0,14), *Pandion haliaetus* (AI=0,35) and *Falco tinnunculus* (AI= 0,13). Confirmed breeding species status and populations are summarized on table 1.

Figure 3: Bird transects in Santa Luzia (n=142)

Table 1: List of Cabo Verde bird species with records from Santa Luzia.

Species	**Common name**	**Red list status**	**Status on Santa Luzia MR**
Alauda razae	Razo Lark	CR	Widespread distribution in the past that included Santo Antão, S. Vicente, Santa Luzia and Raso Islet, as detected trough sub-fossil records Once present, likely to have disappeared with the arrival of people (plus cats, goats etc) on the island.
Ammomanes cinctura	Bar-tailed Lark	LC	Small population on Santa Luzia.
Corvus ruficollis	Brown-necked Raven	LC	Small population on Santa Luzia (< 10 pairs, P. Geraldes *unpublished data*).
Falco tinnunculus neglectus	Cabo Verde Kestrel	*Falco tinnunculus* assessed as LC (IUCN, 2012).	Small population on Santa Luzia. (2-3 pairs P. Geraldes *unpublished data*)

Species	Common name	Red list status	Status on Santa Luzia MR
		Falco tinnunculus neglectus not yet assessed.	
Pandion haliaetus	Osprey	LC, Population trend increasing	Population of 5-6 breeding pairs (Palma *et al.* 2004)
Passer iagoensis	Iago Sparrow	LC	Large breeding population on Santa Luzia.
Tyto alba detorta	Barn Owl	LC, Population trend stable	Confirmed breeding in 1999 and records that indicate regular presence of the species with a small population. This species has been recorded calling in 2013 in the southern part of the island (P. Geraldes *unpublished data*).

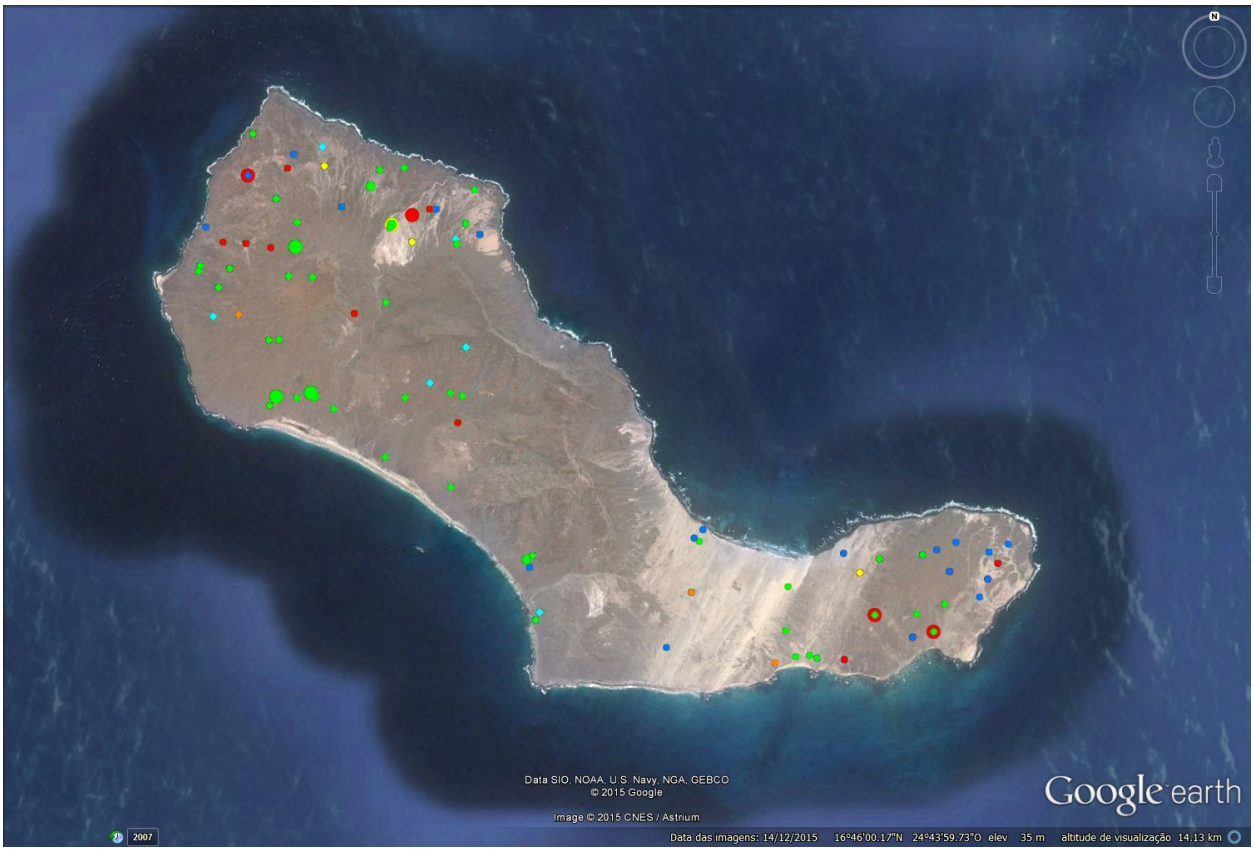

Figure 4: Bird species on Santa Luzia. *Ammomanes cincturus* (● - 2 ●>2), *Passer iagoensis* (●1-10 ● 11-29 ●>29), *Cursorius cursor* (●1-10 ●>30), *Corvus albicollis* (●1-10), *Pandion haliaetus* (●1-10), *Falco tinnunculus* (●1-10)

1.2 Products / Deliverables

An eradication plan was prepared by the project team according to suggestions by the Pacific Invasive initiative that reviewed a preliminary version. This plan was developed with the help of experts from the Madeira National Park and cat ecology experts from Canary Islands. This plan details the methodologies to be used and summarizes the main advantages and disadvantages of the several methods proposed for Santa Luzia, together with backup methodologies to be followed in case of unexpected responses to the methods initially proposed. A proposed budget and calendar are also part of the plan. Due to the sensitive nature of the actions proposed and to the comprehensive detail necessary in the plan, the detailed Operational plan is present in appendix 2.

1.3 Products / Deliverables

During the project several meeting were held with responsible from the Cabo Verde government and from the Global Environment Facility (GEF) representatives in Cabo Verde in order to prepare the operational phase of this project. The Cabo Verde Government wants to be involved in the second phase of this project and participated in the preparation of a concept project proposal sent to the MAVA foundation in July of 2015 that was approved in September 2015. The GEF was also identified as a possible source of funding, and its representatives confirmed the interest in supporting the development of the marine reserve management to improve its conservation status. The concept project was included as appendix 3.

Component 2 (as stated in the approved proposal)

Component 2: Evaluate the threat of mice population and evaluate mice eradication. From previous work in Santa Luzia there is little evidence that cats are controlling mouse numbers (they are mainly eating reptiles, and mice appear to be confined to areas where people stay) so we do not expect a big change in mouse numbers. But we must consider the scenario of cat eradication inducing changes in mouse populations, and must be prepared to take action. The evaluation we already made in 2010, regarding the size of the island, its vertebrate native fauna and the logistic capacity, concluded that mouse eradication would currently be an outstanding challenge. We will develop and implement a mouse population monitoring protocol to track changes in numbers, will evaluate the feasibility of mouse eradication and will design a mouse population control plan that could be applied in strategic areas (Razo Lark releasing area, seabird colonies, etc) if the mouse population increases to a problem level. Performed by SPEA.

9. Describe the results from Component 2 and each product/deliverable

Mice were monitored for a full year cycle and abundance indexes were calculated. Results were published in a poster in a rodent specific international conference in Lisbon together with the monitoring methodologies recommended.

- Rodrigues I., P. Geraldes, N. Oliveira, J. Oliveira, T. Melo 2014. *Estimating population density of rodents in a deserted island and its variation along the year - Situation of mice and rats in Santa Luzia, Cabo Verde*. Poster presented at the 14th Rodens et Spatium, International Conference on Rodent Biology, 28/7 – 2/8 2014. Faculty of Sciences, Lisbon University

Mice eradication from Santa Luzia was considered possible and technically feasible, but not recommended due the cost/benefit relation and to the logistic and financial means necessary. The full evaluation process and reasons are described in the restoration feasibility report prepared (appendix 1).

2.1 Products / Deliverables

We studied the density and abundance of mice in Santa Luzia island trough out the year from April 2013 to March 2014 using humane live traps and capture-recapture methods. 8 squares of 50x50 m were established in the island and sampled each 2 months for 6 consecutive nights. 4 squares were located in the northern half of the island and the other 4 in the southern half to access for local variability in abundances. Each animal caught was anaesthetized and individually marked by cutting its nail tips with a proper code. The traps were baited for six consecutive nights with peanut butter: 3 nights with the doors blocked open to increase animal familiarity with them; the last 3 nights of the 6 night sampling period for the capture sessions. Traps remained active only during night time and were checked before sunrise to avoid capturing non target animals or injuring animals trough overheating due to sunlight exposure. In total just 76 mice were caught and 49 retraps registered along the year. The month with more mice captured was February with 20 mice caught in the southern area. From September to December almost no mice were caught, with the exception of a few captures in November and 4 retraps in September (Fig. 6).

The capture recapture method used was supposed to provide density estimates of the mice population through the use of the Schnabel method, but the low number of captures did not allow significant estimates. Abundance indexes (AI) were calculated instead (Cunningham e Moors 1993) based on the number of captures/night/trap. The maximum abundance index was 0,06 and 0.067 captures/trap/night in February and March respectively. The mean abundance index throughout the year and including all the areas was 0,026.

The sample data did not show a normal distribution and so we used a Kruskal-Wallis (Sokal & Rohlf 1995) test to access differences between dates (month and year) and areas (grid and zone), or the equivalent Wilcoxon test for 2 variables (Fagerland & Sandvik 2009).

The abundance indexes were significatively different between 2013 and 2014 ($W(1)=14,68$, ($p<0,01$)).

The North and South areas did not show a significant difference ($W(1) =1,97$, ($p=0,16$)) between the abundance indexes calculated.

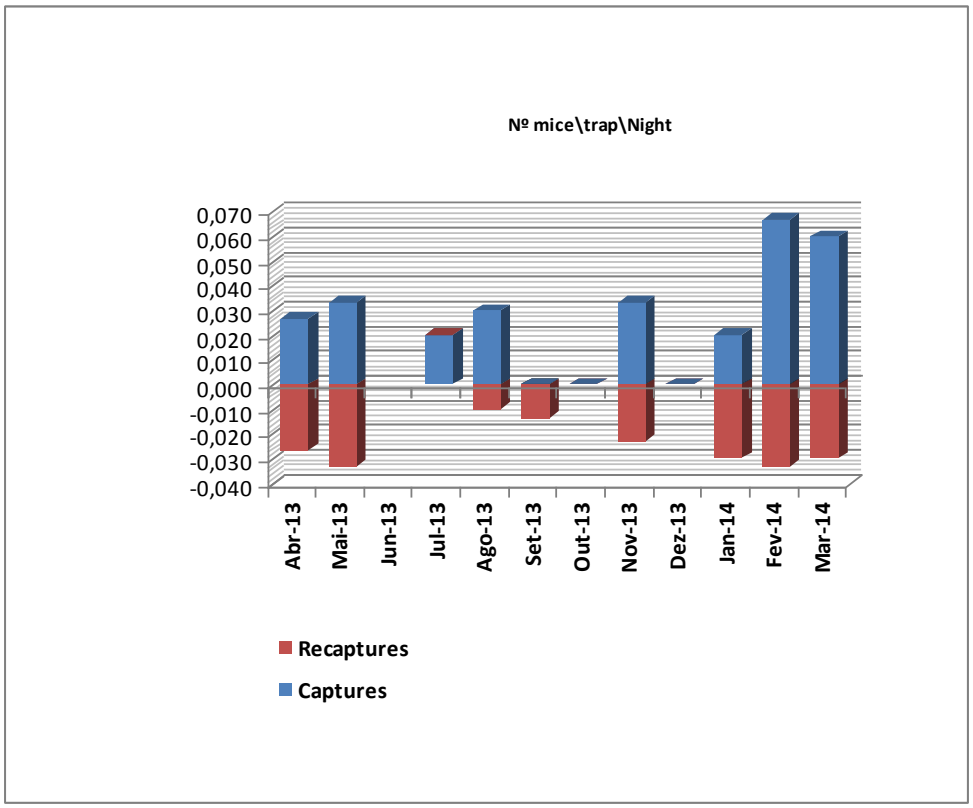

Figure 5: Year cycle of mice captures in Santa Luzia

The mice abundances found were substantially inferior from the ones encountered in a preliminary study (AI=0,053) that took place in 2010 in the same area and from, others in similar macaronesian islands, where annual AI varied between 0,29 on Bugio (2006 and 2007) and 0,61 on Ilheú da Cal (2009 and 2011) (Paulo Oliveira *unpublished data*). The local mice population is subject to large variations in density and abundance due to extreme conditions and occasional meteorological phenomena (temporary floods) as well as lack of food. The low number of captures from August to November can be attributed to the heavy rain showers that occurred in the islands during those months causing flooding of some areas and possibly direct mortality on the mice population. Several animals caught in January and February were juveniles, that also suggests that the higher numbers registered up to March can be from young animals born after the rains. After this period the vegetation starts to dry and the food availability diminishes in the island, what can possibly accounts for the slow decreasing population numbers until the next rains.
The population should continue to be monitored in the future and the impact on the endemic fauna and flora should be accessed. Abundance indexes should be used to allow for a better comparison with this dataset and for ease of use of the monitoring teams in fieldwork

- Results and monitoring methodologies publiseh in:
  Rodrigues I., P. Geraldes, N. Oliveira, J. Oliveira, T. Melo 2014. *Estimating population density of rodents in a deserted island and its variation along the year - Situation of mice and rats in Santa Luzia, Cabo Verde*. Poster presented at the 14th Rodens et Spatium, International Conference on Rodent Biology, 28/7 – 2/8 2014. Faculty of Sciences, Lisbon University

2.2 Products / Deliverables

A full assessment of the mice eradication feasibility, including several scenarios was made and is presented in the "Feasibility study and restoration action plan" (Appendix 1, pages 14 to 37).

The impact of mice is not well documented or understood on Santa Luzia. Data from similar islands prove that healthy plant, reptile and bird communities can support mice predation (as a single predator) for several hundreds of years with no significant decrease in numbers, even in very high densities (Campos & Granadeiro 1999, Granadeiro et al. 2009, Oliveira et al. 2008).
The usual recommended techniques used in islands of this size are not available in Cabo Verde, or very difficult to use in Santa Luzia.
A land-based approach would face difficulties due to the large size of the island, the inexistence of local transport in the island or even connecting tracks. The small amount of landing points prevent good access to all parts of the islands, make landing of large boats impossible and can prevent access due to weather or sea condition for several weeks. All these issues could be surpassed but would make the project much more costly than justifiable. An aerial approach would face unforeseen bureaucratic processes to get authorized, since there are no proper aerial means available in Cabo Verde. Difficult to defend a very large investment in the light of the small and still unproven damage that they cause.
Where mice co-occur with other introduced mammals, their density is suppressed. Meso-predator release is an issue which needs consideration. This was postulated by Courchamp (1999) and describes a process in which the removal of a top predator allows a lower trophic level predator to increase in numbers due to release from predatory pressure. There is evidence that cats predate mice on Santa Luzia (Medina et al. 2012). This study hypothesised that removal of cats could possibly lead to an increase in mice numbers through the release from predation. However, this study did not consider that effect of other birds of prey (barn owls and kestrels) found on Santa Luzia which may have an impact on preventing mesopredator release.
On Santa Luzia, mice are the only mammal species available to cats. One study (Medina et al. 2012) found that cats predate heavily on the extant mouse population. An analysis of 26 cat scats found that mouse consisted of 79.6% of prey species identified. The only bird species identified in this analysis was that of the Iago Sparrow (Passer iagoensis). Reptiles from both the Scincidae and Gekkonidae consisted of 17% of prey in scats. The low number of bird species in the analysis is possibly a reflection of the lack of seabird colonies on the island. In a separate study (Donald et al. 2005), an analysis of 38 scats found that 29 of the samples contained only the bones of skinks, six contained only the bones of mice and just one contained only unidentified seabirds. This result is consistent with the one obtained during this study in which in 108 scat analysed throughout the year reptiles were the most abundant prey (74.8%), followed by mice (53.7%), and birds (15.7%) (Medina et al. in prep). These results strongly suggest that the cat diet changes with the abundance of prey and that their diet is environmentally related apparently adapting to strong fluctuations in density shown by mice populations.
The findings of Wanless et al. (2007) support the mesopredator release and competitor release hypotheses that the value of eradicating competitors and predators of mice (e.g. rats and cats) would be greatly enhanced also by eradicating mice. Equally, some long-term benefits could be compromised if they are not. However, it is possible that food availability is currently limiting mice numbers and not predation by cats. Other data from similar islands with long-term

presence of mice and absence of cats strongly contest the possible adverse impact of the removal of cats while maintaining the mice population without any artificial control measures (PNM, unpublished data). This is true both in the case of Desertas islands where predators such as *Falco tinnunculus* or *Tyto alba* are present like in Santa Luzia, or in the case of Selvagem Grande where no other mice predators where regularly present in the island. In both cases large stable or increasing populations of seabirds, of the same species of the ones existing in Cabo Verde, were present and kept stable or increasing, in spite enduring predation levels from mice populations in very high densities (>250/ha). Nevertheless, the removal of cats and subsequent recolonisation or reintroduction by seabirds and ground nesting birds could provide an extra food source to the extant mice population, and as populations of these birds increase, it would be expected to lead to a possible increase in predation pressure by mice.
There is insufficient evidence at this time to confidently state whether or not the Razo Lark will be able to cope with mice predation of nests. The Razo Lark has been observed to produce one to three eggs per clutch and breeding is in response to rains (see Donald et al. 2003). Ground nesting birds experience high nest predation, especially those that breed in shrub and grassland habitats (Martin, 1993 ; Yanes & Suarez, 1995). In the Selvagens Islands the population of Berthelot's Pipit remained stable with the presence of mice in the island; however after the eradication of mice and rabbits it suffered a twofold increase. This could be both due to the suppression of a direct predation upon the nests, or to the increase in food availability (Oliveira et al. 2010). Another study on lark species adaptation to predation examined two species which are capable of producing 3 clutches per season as an evolved adaptation to predation pressure to increase chances of successful fledging (Yañes & Onate 1996). This study showed that nest lost was not as 'disastrous' as compared to loss of the incubating female. Mice would not be expected to predate on incubating females but may predate on eggs and young chicks. To resolve these issues satisfactorily, the evolution of the mice population and its predation upon Razo Larks should be monitored and evaluated after the reintroduction of the species.

Component 3 (as stated in the approved proposal)

Component 3: Improved conservation status and/or prospects for the critically endangered and endemic Raso Lark. The Raso Lark is presently confined to the small mammal-free islet of Raso, where its population fluctuates in response to rainfall. Confinement to a single island at a population level forever perilously low is certainly a risky prospect for this species. Since the lark's former distribution range included Santa Luzia and São Vicente islands, from where the species presumably disappeared due to the introduction of non-native predators like cats, the obvious solution is to try to promote the recolonisation (through active translocation) to another island. Santa Luzia, after cat eradication, is the obvious candidate. Implemented by SPEA.

- Continue the monitoring and research programme on the Raso Lark population to assess breeding success, survival, habitat use and population trajectory.
- Testing Razo Lark to assess birds response to handling, sea crossing and confinement.
- Use the results of 3.1 and 3.2 to prepare a Razo Lark translocation plan - A comprehensive plan for translocation of Razo Lark to Santa Luzia after cat eradication.

10. Describe the results from Component 3 and each product/deliverable

Razo lark was monitored annually and its population was accesses and its evolution trend calculated. A Razo lark translocation plan was written and is presented as a full dedicated chapter on the "Feasibility study and restoration action plan 2016 – 2020" (Appendix 1, pages 38 - 45).

Razo Larks were marked with radio-tracking tags and a radio-tracking test was performed to help define the radio-tracking monitoring methods after the translocation to Santa Luzia. Tags were proved to be detectable from 200m to 400m, but attachment method must be improved.

Full report on this component is included as Appendix 6 to this report (Raso Lark Studies 6-26 November 2013. *A preliminary report to CEPF (project part-funders), SPEA, and the Direcção Geral do Ambiente, Praia, Cape Verdes*. M. de L. Brooke & E.G. Dierickx)

3.1 Products / Deliverables

Razo lark was monitored in the scope of the project in November 2013.

Altogether 81 birds were caught, of which 66 were new birds, three recently-fledged juveniles and the remaining 63 post-juvenile. Ten retraps were already fully colour-ringed. The remaining five retraps were caught with one or two, not three colour rings: their full colour ring sets were restored.

From the 352 free-flying birds that were recorded in 2012 with a full set of colour rings, 239 were seen alive in 2013, most with a full set of colour rings but, in a small minority of cases, they were missing a single colour ring but nevertheless their exact identity could be confidently assigned. Thus minimum overall survival was 67.9%. Minimum 2012-2013 survivorship of males and females was 63.3 % (114/180) and 72.6 % (122/168) respectively. This is the first time in the study that apparent survival of females was higher than that of males.

Now that the study has been underway since 2002, the possibility of detecting changes in survivorship as birds age is becoming more realistic. Figure 6 shows observed survival 2012-2013 of birds ringed in different years – with a strong suggestion that the oldest birds are surviving less well.

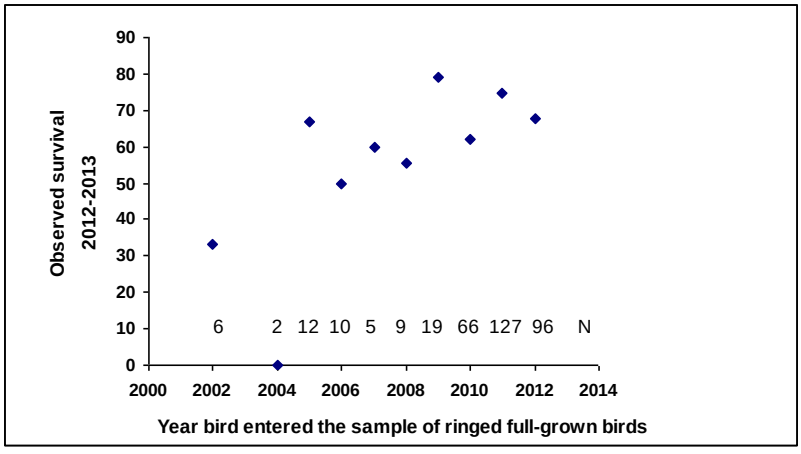

Figure 6. Survival November 2012 – November 2013 of larks ringed in different years.

All captured birds were measured and blood samples were taken from all newly-captured birds for genetic analysis. With a high proportion of colour-ringed birds genotyped, one would strive

to ensure that all known haplotypes are represented in any group of birds that might be translocated to Santa Luzia. However the larger population and correspondingly lower proportion of birds ringed means it is more difficult to catch birds of any particular haplotype 'on demand' than it was before the dramatic population increase.
Nine birds recaptured at least three years after their first capture were re-sampled to allow assessment of the rate of telomere decay since the time of first sampling, as discussed in last year's report.
The familiar mark-recapture method of assessing population size was followed. Following our catching efforts, 340 birds were individually colour-ringed by 23 November and 341 by 24 November. On 24 and 25 November we separately traversed Raso for around 3 hours per day, attempting to sample larks in a quasi-random manner to ascertain what proportion was colour-ringed. Adding both days' results from both observers, 108 colour-ringed birds were seen, plus 277 birds that were not ringed. This suggests a total population of 340.5 x (108 + 277) / 108 = 1214 (Table 2).

Table 2. Ten years' results on the total number of Raso Larks estimated using a simple Lincoln Index

Year	Population estimate
2004	57
2005	132
2006	140
2007	159
2008	184
2009	193
2010	486
2011	1558
2012	1546
2013	1214

3.2 Products / Deliverables

Biotrack radio tags were fixed to four larks to assess how successfully they allowed the birds to be located and followed on Raso and, by extension, Santa Luzia if and when birds are translocated to the latter. The birds comprised one male and female marked in Cha Branca and one male and one female marked in Cha da Castelo. The Cha Branca male was seen to still have its tag five days after attachment. However Pedro Geraldes' attempts to locate the birds using their radio signals were not successful. About a week after tagging, a search for the two Cha da Castelo birds discovered one radio tag that had fallen off the lark, although the attachment technique, superglue to fix the tag between the bird's shoulders, is a standard method. The search for the second Cha da Castelo bird was apparently homing in on the bird when the receiver's battery failed. Returning three days later (i.e. 11 days after the birds were radio-tagged), Pedro failed to detect any signal whatsoever from the two Cha Branca birds.

No further test were conducted since the birds were determined to withstand being handled and the distance to Santa Luzia does not require extra time of confinement. Birds marked with radio tags were observed in the days after losing the tag without any signs of disturbance.

3.3 Products / Deliverables

A comprehensive translocation plan to establish a Razo lark population in Santa Luzia with birds from the Raso islet was prepared. The plan is included in the broader scope document "Feasibility study and restoration action plan 2016 – 2020" (Appendix 1, pages 38 - 45).

Component 4 (as stated in the approved proposal)

Component 4: Full protection of seabird colonies in Raso and Branco and recovery plans for Santa Luzia. Improved knowledge and status of seabird colonies in Raso and Branco and promotion of seabird recolonisation of Santa Luzia. Cape Verde Shearwater (Near Threatened) is endemic to the country and is the most abundant seabird of Raso. Together with Branco these islets are believed to hold the largest colony in Cape Verde (size not known, but estimated to be more than 10,000 pairs) and thus are of global conservation concern. Research and monitoring will be enhanced to define the true conservation status and distribution of this and other seabird species. Implemented by Biosfera 1.

- Baseline population and distribution estimates of seabirds on Raso, Banco and Santa Luzia.
- A seabird colony restoration plan for Santa Luzia island.
- Monitoring protocol to track changes in numbers of seabirds over time.

11. Describe the results from Component 4 and each product/deliverable

Seabirds were monitored in the three island, according to the different species present and different challenges specific to each island. Cabo Verde Shearwater Raso population was estimated at 6312 breeding pairs in 2015. Restoration plans involve translocations to Santa Luzia and are fully dependant on the success of the cat eradication from the island. Details and monitoring protocols for each species and island are described in detail on the "SLuzia_seabird.monitoring.report" included as Appendix 7.

4.1 Products / Deliverables

Population estimates and abundance were determined for Santa Luzia, Branco and Raso. The full report and estimates is included as Appendix 7.
On Santa Luzia, three other locations where *Oceanodroma castro* potentially breeds were found.
Branco was prospected for breeding seabirds and *B. Bulweria* and *P. lherminieri* were confirmed as breeders. The *Calonectris edwardsii* population was estimated to be over 3500 birds.
The Raso islet seabird populations were monitored and estimates or abundance indexes were calculated

Table 3. Breeding seabird population estimates

	Oceanodroma castro	*Bulweria bulweri*	*Calonectris edwardsii*	*Puffinus lherminieri*	*Phaethon athereus*	*Sula lecogaster*	*Pelagodroma marina*
Santa Luzia	Potential breeder No estimate available	-	-	-	-	-	-
Branco	Confirmed breeder No estimate available	Confirmed breeder No estimate available	Confirmed breeder >3500 birds	Confirmed breeder No estimate available	-	-	Confirmed breeder No estimate available
Raso	Confirmed breeder No estimate available	Confirmed breeder 349 breeding pairs/ha (5m plots)	Confirmed breeder 6312 breeding pairs (2015)	Confirmed breeder No estimate available	Confirmed breeder 50-100 breeding pairs (2015)	Confirmed breeder 50-100 breeding pairs (2015)	-

4.2 Products / Deliverables

A seabird colony restoration plan is highly dependent on the success of the cat eradication operations and cold not initiate in any foreseeable medium-term future. Nevertheless restoration recommendations and future guidelines were included in Appendix 1 “Feasibility study and restoration action plan 2016 – 2020” (Appendix 1, pages 46 -56). The candidate species analysed are described in table 4.

Table 4: Potential seabird species to translocate to Santa Luzia present in the Marine reserve**.**

Species	Status	Susceptibility to mice predation	Summary restoration	Potential source population	Minimum Duration	Recommended time for translocation	Estimated population at source
Cabo Verde Shearwater *Calonectris edwardsii*	NT	The similar species, Cory's shearwater has been described as impacted by mice predation (Zino *et al.* 2008)	Target of 15 individuals for each year to reach a total of approximately 60 birds.	Raso islet	3-5 years	August-September	6500 breeding pairs
Cabo Verde Little Shearwater *Puffinus lherminieri*	LC	Co-existence with high density mice populations reported from Selvagens islands (Oliveira *et al.* 2008)	Target of 10 individuals for each year to reach a total of approximately 30 birds	Raso islet	2-4 years	February-March	10-100 pairs (Poor estimate)
Bulwer's Petrel *Bulweria bulwerii*	LC	Unknown	Target of 15 individuals for each year to reach a total of approximately 45 birds	Raso islet	2-4 years	May-June	100-1000 pairs (poor estimate)
Cabo Verde storm petrel *Oceanodroma (jabejabe) castro*	LC	Mice are not described as a significant predator of the Ashy storm petrel. Co-existence with high density mice populations reported from Desertas islands (Geraldes *pers comm*)	Potential for natural recolonisation after the removal of cats since there are three potential breeding sites on the island (Oliveira *et al.* 2012, Geraldes *pers comm*).	Santa Luzia	2-4 years	No translocation needed	10-100 pairs (poor estimate)
White-faced Storrm-petrel *Pelagodroma marina*	LC	Mice are reported to be a significant threat to breeding success of this species, but large populations can withstand high predation levels and keep stable (Campos & Granadeiro 1999). The WFSP suitability for reintroduction to Santa Luzia with mice still present as to be further evaluated in detail.	Translocation was never tried for this species and the source population is located in a very inaccessible island. A comprehensive study on diet of the juveniles is necessary prior to any trial translocation.	Branco islet	3-5 years	April-May	100-1000 pairs (poor estimate)

4.3 Products / Deliverables

Seabird knowledge on the marine reserve was markedly improved, but several gaps of knowledge still subsist. Recommended monitoring protocols for the seven species present in the reserve and for the three islands are detailed in Appendix 7 "SLuzia_seabird.monitoring.report".

Component 5 (as stated in the approved proposal)

Component 5: Effective protection of sea turtle and terrestrial reptiles in Santa Luzia and enhancement of their populations. Loggerhead Turtle breeds in Santa Luzia, with a population whose size is poorly known. These islands have a history of uncontrolled levels of poaching and harvesting of seabirds and sea turtles. Several taxa are now extinct, particularly reptile species from Santa Luzia. This project will provide a regular presence of Biosfera 1 staff members and volunteers during the most vulnerable periods, to ensure the monitoring and surveillance of key sites to safeguard turtle populations and monitor all reptile populations. Further research will be undertaken into the status and threats of marine and terrestrial reptiles. Implemented by Biosfera 1

- Baseline population data for Loggerhead Turtle and terrestrial reptiles on Santa Luzia, including assessment of the status of the possibly extinct Cocteau's Skink and the threatened and endemic Cape Verde Giant Gecko.
- Plan to improve conservation status of native terrestrial reptiles and Loggerhead Turtle on Santa Luzia.
- ==Amendment== (October 2014 to September 2015) New deliverable Secure the Turtle surveillance and monitoring campaign for 2015

12. Describe the results from Component 5 and each product/deliverable

Prospection for the Cocteau's Skink was made during a specific mission to Branco islet in 2014. Nesting Loggerhead Turtle population was monitored from 2013 to 2015 and monitoring reports were delivered to the National Environmental Agency on an annual basis.
Reptile populations were monitored through transects and direct prospections in suitable areas of habitat. During a full year cycle (April 2013 to March 2014), diurnal and nocturnal transects were carried out monthly in Santa Luzia to detect reptile species presence and abundance. Diurnal transects targeted mostly the Stanger's Skink and the nocturnal transects were directed at the geckos (Figure 7).

Figure 7: Diurnal (light green) and nocturnal transects (dark green) on a 1 Km^2 grid in Santa Luzia

The island was divided on 1x1 Km squares and in each accessible square, 3 diurnal and 3 nocturnal transects of 300m in length were made. Along each transect, rocks and other possible hides located 1m to each side of the transect were lifted.
In total 362 transects were made, 198 diurnal and 164 nocturnal transects (**Table 5**).

	2013									**2014**		
Month	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**
Diurnal	9	15	-	9	9	9	9	29	20	27	27	35
Nocturnal	9	7	-	9	9	9	9	24	8	27	27	26

Table 5: Number of nocturnal and diurnal transects in Santa Luzia

For the most inaccessible areas where line transects were not possible, direct prospections were carried out, specifically oriented for the detection of *Hemidactylus bouvieri razoensis*. Teams of two observers would actively search for reptiles under rocks and plants for periods of 15 min and would then change the prospecting area.

5.1 Products / Deliverables

A reptile monitoring report was prepared with a comprehensive analysis of the terrestrial reptile species status, and including monitoring protocols for future reference.
A specific mission took place in Branco islet to prospect the area for the possible presence of the Cocteau's Skink. No signs of this animal were found and further prospections are recommended.
Monitoring and population evaluation results are described in detail in the "Terrestrial reptile monitoring report 2013 – 2015" document delivered (Appendix 4).

5.2 Products / Deliverables

A scientific paper was published in a peer-reviewed journal with results from the 2013 campaign in which more than 500 nest were recorded in Santa Luzia (http://www.bioone.org/doi/full/10.2744/CCB-1143.1), what constitutes more than 1% of the Atlantic population of this species.
Yearly monitoring reports with the campaign results were delivered to the National environmental agency. These reports follow the template of the National Turtle Action Plan andwere prepared in coordination with the monitoring actions in the remaining islands of Cabo Verde. The turtle monitoring reports are included as Appendix 8.

5.3 Products / Deliverables

The turtle monitoring campaign took place from June to October and 565 nest were counted by 25 volunteers during the 2015 season. 1675 turtles ecloded and the hatching success calculated was 58%. The campaign report is detailed in Appendix 8.

Component 6 (as stated in the approved proposal)
Component 6: Public awareness and education showcasing island restoration and biodiversity value of the islands. The success of the project relies also on the involvement of local fisherman. In order to do this, we will promote local community meetings from the early stages of the project. We will also promote the discussion of the management plan for the MPA, including coastal fisheries planning and visitation to the islands. We will provide interested fishermen with basic training in species identification and natural resource monitoring. National and global communication and dissemination of the project action and results it is a basic component of any conservation project. It aims to inform and involve citizens in a wider scale and to acknowledge the effort of the partnership. Implemented by Biosfera 1.

- Webpage of the project.
- Increased public awareness, particularly among key stakeholders (fishermen) and monitoring of Involuntary Restriction Process Framework.
- Communication plan to implement in the operational phase of the project
- Biosecurity protocol agreed with several stakeholders.
- ==Amendment== (October 2014 to September 2015) New deliverable Prepare a Workshop with fishermen using Santa Luzia waters and the Governmental responsibles to discuss the Reserve Management Plan

- ==Amendment== (October 2014 to September 2015) New deliverable Advertising campaign targeting fishermen communities to explain the added value of sustainable harvesting of resources, opposite illegal methods currently in use. This campaign will also address by-catch of birds and turtles and ways to prevent it

13. Describe the results from Component 6 and each product/deliverable

A project webpage was constructed (www.biosfera1.com), but it is not fully updated as the organisation struggles with human capacity for using all the communication tools available. After a careful evaluation, Biosfera decided that at this stage their Facebook page is a better and more efficient tool to communicate with their members and reached their target audiences more effectively. The webpage was kept with institutional information and documents and the web address was secured for the future improvement.
A detailed communication plan was not found useful, since due to the small size of the organization it would not be useful of functional during the operational phase of the project. Nevertheless, communication guidelines were prepared to implement during that stage and Biosfera staff was trained in communication procedures. Workshops with the most relevant fishermen communities took place during May 2015 with the presence and participation of the reserve Director and it was discussed with them the full reach of the reserve management plan and the advantages of sustainable use of resources within this protected area. A leaflet explaining these advantages was designed, produced and distributed during those workshops.

6.1 Products / Deliverables

Biosfera 1 created an official webpage and reserved the web address with their name.
http://www.biosfera1.com/
The Facebook webpage of Biosfera is regularly updated with news about their projects and activities and reached hundreds of supporters.
https://www.facebook.com/Biosfera-I-382189868476415/?fref=ts

6.2 Products / Deliverables

Biosfera maintained a regular relationship with the fishermen communities in the area and organized several workshops with them to promote sustainable use of the Marine Protected area, cleaning campaigns at the beach and to explain the new rules and regulations of the reserve to be implemented with the management plan.
Biosfera also gave several interviews for the Cabo Verde National TV station and conducts regular radio programs during the field work season. A major exhibit about Santa Luzia Reserve natural values was organized and was available during 2 months in the summer of 2015 and it was visited by more than 8000 persons. A video documentary was also prepared about the project and it is available at https://vimeo.com/145051961

6.3 Products / Deliverables

Biosfera 1 defined communication guidelines to follow during the phase 2 of the project. A full communication plan would have to be coordinated with the internal communication plans of each partner to be included during the project phase 2 and will be subject to changes according to the partners chosen.

6.4 Products / Deliverables

Biosecurity best practices presented to fishermen. Currently the Reserve totally lacks the means and capacity to implement any bio-security measures, since it has no proper staff or any surveillance plan. A bio-security plan will have to adapt to the equipment and personnel available.
Biosfera 1, SPEA and RSPB prepared a bio-security intervention plan that was followed to confirm a possible Rat sighting in Razo.
Any intervention concerning bio-security will have to be adapted in a case by case situation.
Biosfera 1 alerted the fishermen to include them in an early alert warning network. At the end of the project Biosfera has the means, capacity and expertise to intervene in urgent situations, and established a local network of contacts to allow for early detection of problems in the Marine Reserve, as well as of experts to advise on more exigent situations. This set-up already allowed for the detection and removal of a dog introduced in Santa Luzia in 2015.
The bio-security Rat intervention action plan is included in appendix 9.

6.5 and 6.6 Products / Deliverables

Several Workshops were made with the participation of the fishermen communities and the Nature Reserve Director. Five different communities from Santo Antão, São Vicente and São Nicolau islands participated in these workshops where sustainable uses of the reserve were discussed, together with the new rules included in the management plan, sustainable fishing techniques and problems caused by the by-catch associated with some techniques. 215 fishermen participated in these workshops out of a community of 481 and a leaflet about by-catch was produced and distributed among the participants.

Component 7 (as stated in the approved proposal)
Component 7: Organizational development of Biosfera 1 and citizenship in the region. Enhancing conservation capacity of Biosfera 1. This organisation is strongly committed with biodiversity conservation in Cape Verde and it is expected that by the end of the project will have stronger capacity to further extend its work on the conservation and monitoring of the Cape Verde's biodiversity. ==Amendment== (October 2014 to September 2015) SPEA will organize a workshop to help Biosfera to develop a strategy for the next years of the organization. SPEA will provide continuous support to Biosfera 1n data collection and data treatment, as well as in reporting to funders, preparing project applications and general internal management Implemented by SPEA.

- Biosfera 1 fully and actively involved in the implementation of the management plan for the marine protected area
- ==Amendment== (October 2014 to September 2015) New deliverable Biosfera 1 has elections for its Board and secures transparent internal governance rules. Updated list of Members and supporters
- ==Amendment== (October 2014 to September 2015) New deliverable An Activity report for the last 8 years of Biosfera activity will be prepared and circulated amongst members and in the Biosfera Webpage. The Biosfera Webpage will be updated with information from all current and past projects, with their results and objectives
- ==Amendment== (October 2014 to September 2015) New deliverable Training workshop to develop a future strategy for Biosfera 1 Biosfera has a strategy for the next two mandates of the Board

14. Describe the results from Component 7 and each product/deliverable

Biosfera conducted a workshop with its members, staff and partner organisations in which a Strategy 20015-2019 was defined. In November 2014 a new Board was elected and new statutes and internal rules were approved. Membership status was defined and members list updated. A report on the activities of Biosfera that summarizes the last 8 years of work was prepared and is available at (http://santaluzia.spea.pt/pt/resultados).

7.1 Products / Deliverables

Biosfera 1 is actively involved in the management plan and was designated as co-manager of the reserve by the National Environmental Agency. During this project a close working relationship was established with the new Reserve director, that translated in the coordinated participation of the DNA (National Environmental Agency) in the preparation of the proposal for funding of the next project phase.

7.2 Products / Deliverables

Biosfera held elections for a new Board in November 2014. New statutes and internal regulations were approved and legally recognized by the new board. The membership list and member status was updated.

7.3 Products / Deliverables

Biosfera 1 prepared an activity report for the period 2006-2015 and divulged it in its facebook webpage (appendix 10)
http://santaluzia.spea.pt/fotos/editor2/historiadosprojectos.pdf

7.4 Products / Deliverables

A strategic workshop took place in Mars 2015 to define the Biosfera strategy for 2015-1019. The new strategy was prepared and is included as Appendix 11 to this report.

Component 8 (as stated in the approved proposal)

Component 8: Ensure the legacy of the project The long-term success of this project can only be secured if a sustainable source of conservation funding can be found to monitor the recovery of the islands. Developing this sustainability is an essential part of this project. Implemented by SPEA.

- A project follow-up strategy that identifies the resources needed to implement the second phase that includes the cat eradication, the lark translocation, and other relevant conservation operations.
- Funding proposals to allow implementation of Phase 2

15. Describe the results from Component 8 and each product/deliverable

Conservation operations needed are clearly defined on the main documents prepared and delivered as project results

- Santa_Luzia_Restoration_ jan2016.pdf
- Operational.plan.Santa.Luzia.Jan16.pdf

Funding proposals were submitted to the MAVA foundation and the project was also presented to the Global Environment Facility to include for priority funding in Cabo Verde on the next United Nations Framework. A concept project proposal was submitted and approved by the MAVA Foundation and a full proposal is under development to deliver January 2016.

8.1 Products / Deliverables

A full restoration plan was prepared, including all the information necessary to proceed with the cat eradication, and to follow-up on the monitoring of the species present in the reserve (Appendix 1 - *Feasibility study and restoration action plan 2016 – 2020*). An operational plan for cat eradication was also prepared summarizing all the requirements for the next phase of this action, together with a budget estimate and proposed calendar (Appendix 2 - *Operational plan for the eradication of Cats in Santa Luzia*).

8.2 Products / Deliverables

A project concept proposal was submitted to the MAVA foundation in July 2015 and received MAVA's approval in September 2015.
Following the approval of the concept project, a full project proposal is being developed by SPEA together with Biosfera 1, the RSPB, the Santa Luzia Reserve Director and the National Environmental Agency to submit in Mars 2016.

16. If you did not complete any component or deliverable, how did this affect the overall impact of the project?

All the deliverables have been completed without compromising the impact of the project, although some components were slightly changed in its scope (e.g. densities of mice were so lower than expected that just abundance indexes were possible to calculate; cat surveys were not able to deliver an objective number of the cat population since the size of the island, their large home ranges and rapid breeding rate does not allow to define a stable population at any given moment, distribution and habitat mapping was registered instead). Communication guidelines to be followed by Biosfera 1 team were preferred to a full communication plan at this stage, without any negative impact on the project objectives

17. Please describe and submit any tools, products, or methodologies that resulted from this project or contributed to the results

The following documents, papers and reports were prepared and delivered:

poster.mice.Santa.Luzia
Poster with results from mice population evaluation, monitoring and methodologies on Santa Luzia

Chelonian.Conservation.Biology.2015
Scientific paper with the marine turtle population status on Santa Luzia

poster_cientifico tartarugas
Scientific poster with results from the turtle surveillance camps

turtle.bycatch.poster
Scientific poster with results from a marine turtle bycatch evaluation project

CEPF Global Monitoring Data

Respond to the questions and complete the tables below. If a question is not relevant to your project, please make an entry of 0 (zero) or n/a (not applicable).

18. Did your organization complete the CEPF Civil Society Tracking Tool (CSTT) at the beginning and end of your project? (Please be sure to submit the final CSTT tool to CEPF if you haven't already done so.)

SPEA

	Date	Composite Score
Baseline CSTT	01/05/2013	82
Final CSTT	17/01/2016	85.5

Biosfera (Sub-grantee)

	Date	Composite Score
Baseline CSTT	January 2013	37.5
Final CSTT	January 2016	55.5

19. List any vulnerable, endangered, or critically endangered species conserved due to your project

Razo Lark *Alauda razae* – Critically endangered
Razo Gecko *Tarentola Gigas* – Endangered
Cape Verde Leaf-toed Gecko *Hemidactylos bouvieri* – Critically endangered
Cabo Verde Shearwater *Calonectris edwardsi* – Near Threatened

Hectares Under Improved Management

Project Results	Hectares*	Comments
20. Did your project strengthen the management of an existing protected area?	3500	*Reserva Natural de Santa Luzia*
21. Did your project create a new protected area or expand an existing protected area?	n/a	*n/a*
22. Did your project strengthen the management of a key biodiversity	3500	*Reserva Natural de Santa Luzia*

area named in the CEPF Ecosystem Profile (hectares may be the same as questions above)		
23. Did your project improve the management of a production landscape for biodiversity conservation	n/a	*n/a*

** Include total hectares from project inception to completion*

24. In relation to the two questions above on protected areas, did your project complete a Management Effectiveness Tracking Tool (METT), or facilitate the completion of a METT by protected area authorities? If so, complete the table below. *(Note that there will often be more than one METT for an individual protected area.)*

Protected area	Date of METT	Composite METT Score	Date of METT	Composite METT Score	Date of METT	Composite METT Score
Santa Luzia	17/01/2016	52				

25. List the name of any corridor (named in the Ecosystem Profile) in which you worked and how you contributed to its improved management, if applicable.

No corridors defined for Cabo Verde in the Ecosystem profile of the Mediterranean Region.
The project contributed to increase awareness about Santa Luzia Marine Reserve problems and is working closely with its new Director to secure staff and equipment to implement the management plan of the area.

Direct Beneficiaries: Training and Education

Did your project provide training or education for . . .	Male	Female	Total	Brief Description
26. Adults for community leadership or resource management positions	148	-	148	Workshop
27. Adults for livelihoods or increased income	3	-	3	Seabird surveys temporary contracts
28. School-aged children	3200	3200	6400	Lectures and Santa Luzia exhibit
29. Other	1000	1000	2000	Santa Luzia exhibit

30. List the name and approximate population size of any "community" that benefited from the project.

Fishermen communitiy from Calhau, São Vicente Island, Cabo Verde.
6 persons participated on the Workshop about reserve management rules and sustainable fishing out of a community of 22

Fishermen community from Salamansa, São Vicente Island, Cabo Verde.
70 persons participated on the Workshop about reserve management rules and sustainable out of a community of 134

Fishermen community from S. Pedro, São Vicente Island, Cabo Verde.
30 persons participated on the Workshop about reserve management rules and sustainable out of a community of 142

Fishermen community from Mindelo, São Vicente Island, Cabo Verde
26 persons participated on the Workshop about reserve management rules and sustainable out of a larger community (30 to 50 estimated)

Fishermen community from Tarrafal, São Nicolau Island, Cabo Verde
13 persons participated on the Workshop about reserve management rules and sustainable out of community of 133

Fishermen community from Sinagoga, Santo Antão Island, Cabo Verde.
3 persons participated on the seabird survey fieldwork actions out of a community of 45

31. Socioeconomic Benefits to Target Communities

Based on the list of communities above, write the name of the communities in the left column below. In the subsequent columns under Community Characteristics and Nature of Socioeconomic Benefit, place an X in all relevant boxes.

Community Name	Community Characteristics								Nature of Socioeconomic Benefit											
									Increased income due to:											
	Small landowners	Subsistence economy	Indigenous/ ethnic peoples	Pastoralists / nomadic peoples	Recent migrants	Urban communities	Communities falling below the poverty line	Other	Adoption of sustainable natural resources management practices	Ecotourism revenues	Park management activities	Payment for environmental services	Increased food security due to the adoption of sustainable fishing, hunting, or agricultural practices	More secure access to water resources	Improved tenure in land or other natural resource due to titling, reduction of colonization, etc.	Reduced risk of natural disasters (fires, landslides, flooding, etc)	More secure sources of energy	Increased access to public services, such as education, health, or credit	Improved use of traditional knowledge for environmental management	More participatory decision-making due to strengthened civil society and governance	Other
Calhau		X																		X	
Salamansa		X																		X	
São Pedro		X																		X	
Mindelo		X																		X	
Sinagoga		X										X								X	

If you marked "Other", please provide detail on the nature of the Community Characteristic and Socioeconomic Benefit:

Lessons Learned

32. Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community

It is very important that projects that aim to establish comprehensive reference situations and that required quite a lot of different skills and expertise must have the adequate human resources available. A strong component of this project was to build capacity of a sub-grantee organization, and that objective was achieved in a very satisfying way with a strong increase of performance, stability and responsibilities on the part of the sub-grantee. Nevertheless, a strong percentage of the implementation of the field work actions were attributed to the sub-grantee and thus it was difficult to manage both the building capacity activities simultaneously with the level of achievement expected for the field work results from an organisation that was in a learning process. This could be avoided with a better distribution of responsibilities and more realistic expectations on the part assumed by the grantee and sub-grantee, or a different allocation of human resources available.

33. Project Design Process *(aspects of the project design that contributed to its success/shortcomings)*

The project design processes were adequate to the expected results.

34. Project Implementation *(aspects of the project execution that contributed to its success/shortcomings)*

Projects in remote areas with difficult access and highly dependant on equipments and services not readily available in the region (such as boats or engine maintenance) should always preview a backup plan to be able to achieve the results expected in case of failure of these equipment items. Within this project, the access to the work area was several times compromised due to engine failure of the only existing boat. These problems were circumvented resorting to opportunistically boarding on fishermen boats, but limited the regularity of the work that was done. The surveys and monitoring were always accomplished according to plan, but major logistical changes had to be made on a daily basis during the fieldwork phase.

35. Describe any other lessons learned relevant to the conservation community

Visit from the funders' team (in this case CEPF) is a major incentive to the fieldwork teams and helps to realise what is expected from them. It is especially so in the case of Sub-grantees with lesser access to the formal parts of the project application and reporting. The strong support from the CEPF team helped to achieve the results expected but a physical presence during the project implementation phase can constitute a strong incentive for the implementation team.

Sustainability / Replication

36. Summarize the success or challenges in ensuring the project will be sustained or replicated

The growth in satiability and capacity of Biosfera team was enormous and it is now clear that this organisation as the capacity to secure larger projects and to deliver the results expected. A permanent staff and equipped headquarters area a major advancement for future project.
The changes in the Biosfera Board and the implementation of a new strategy, statutes and internal rules helped to secure transparent financial mechanisms for funders and to secure Biosfera future that is now not dependent on volunteer work.

37. **Summarize any unplanned activities that are likely to result in increased sustainability or replicability**

The large, Coastal Guard type, boat currently owned by Biosfera (offered within the scope of the partnership with the Sea Shepherd Foundation) improves greatly the access to the main area of work of this NGO (Santa Luzia Marine Reserve) and also increases the capacity of the Government that can also implement several management rules trough cooperation with Biosfera.
A larger exhibit on the biodiversity and conservation values of Santa Luzia was organized in Mindelo in the summer of 2014 band was visited by more than 8000 persons and was advertised in all the islands of Cabo Verde. A video documentary about the project was made I 2014 and widely distributed. This film reached several thousands of persons, won several film awards and was an unexpected outcome of the project (https://www.facebook.com/FilmExpeditionToCaboVerde/?fref=nf).
https://vimeo.com/145068970 (Portuguese Version)
https://vimeo.com/145051961 (English VErsion)

Safeguards

38. If not listed as a separate Project Component and described above, summarize the implementation of any required action related to social, environmental, or pest management safeguards

A Rat sighting report on Raso Islet in November of 2014 triggered a fast response action plan preparation and implementation by Biosfera, SPEA and RSPB to confirm the sighting and track and contain the possible invasion. The sighting was not confirmed and after 6 months of dedicated monitoring the island was still considered Rat free.
A dog was also detected by the Biosfera work team on Santa Luzia and removed from the island and transported to São Vicente.

Additional Comments/Recommendations

39. Use this space to provide any further comments or recommendations in relation to your project or CEPF

The conditions in which Biosfera used to travel to the islands were not only extremely hazardous, as they were a strong health risk, and the recent Biosfera ownership of a large boat overcame that problem during 2015 and will be the guarantee to future work in the reserve.

Additional Funding

40. Provide details of any additional funding that supported this project and any funding secured for the project, organization, or the region, as a result of CEPF investment

Donor	Type of Funding*	Amount	Notes
Sea shepherd	B	25000€	This support was given to Biosfera to maintain the boat offered and was a major advantage for all the activities within this project in 2014 and 2015

** Categorize the type of funding as:*

A Project Co-Financing (other donors or your organization contribute to the direct costs of this project)
B Grantee and Partner Leveraging (other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF funded project)
*C Regional/Portfolio Leveraging (other donors make large investments in a region because of CEPF investm*ent or successes related to this project)

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

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APPENDIXS

Appendix 1
Santa_Luzia_Restoration_jan2016
Santa Luzia restoration plan and feasibility study

Appendix 2
Operational.plan.Santa.Luzia.Jan16
Operational plan for Cat eradication from Santa Luzia

Appendix 3
Project-Concept_MAVA.19.01.2015
Concept project submitted and approved by MAVA Foundation for the second stage of the project

Appendix 4
SLuzia_reptile.monitoring.report
Reptile surveys on Santa Luzia marine reserve and monitoring reports and protocol

Appendix 5
Medina.etal.cat.diet.SLuzia.2014.inprep
Table with preliminary results of cat diet on Santa Luzia

Appendix 6
CVERDES_2013_Lark.monitoring.CEPF
Monitoring report of the Razo Lark population in 2013 (Mike Brooke)

Appendix 7
SLuzia_seabird.monitoring.report
Seabird surveys on Santa Luzia marine reserve and monitoring reports and protocol

Appendix 8
8.1
Turtle.monitoring.2013_PT
Turtle monitoring report from 2013 (in Portuguese)
8.2
Turtle.monitoring.2014_PT
Turtle monitoring report from 2014 (in Portuguese)
8.3
Turtle.monitoring.2015_PT
Turtle monitoring report from 2015 (in Portuguese)

Appendix 9
Biosecurity intervention plan following a possible Rat sighting in Raso Islet
Rapid response action plan prepared to confirm and manage a possible Rat invasion on Raso Islet

Appendix 10
historia dos projectos
Biosfera report of the conservation work made from 2006 to 2015

Appendix 11
Biosfera.strategic.plan. 2015-19
Biosfera strategy until 2019