St Helena Government

Landscape & Ecological Mitigation Programme (LEMP)

Annual Report

April 2016 – March 2017

1. Executive Summary

1.1. The third full year of the LEMP project has seen significant progress in rehabilitation works on the ground and the start of a number of compensatory activities during a period of institutional and leadership changes and despite severe drought conditions on St Helena.

1.2. 2016/17 saw the LEMP complete the fencing of 16 plots across five main sites enclosing a total of 2.3 hectares using 2.2km of fencing. More than 23,000 of the plants propagated for LEMP during this year and the previous year were planted into LEMP sites and Environmental Management Division (EMD) seed orchards and gene banks (see Appendix 1 for key achievements). Despite the severe drought the survival rate of plants was estimated at an average of 69% across all species.

1.3. On 1 October 2016 LEMP staff transferred from the Airport Directorate to the Environment and Natural Resources Directorate (ENRD) as the institutional home of the LEMP was changed to reflect a more appropriate long term organisational structure. The previous LEMP Project Manager, who had been with the project since October 2013, completed his contract and left the island in October 2016 with his successor arriving in December 2016. The LEMP team saw a number of other staffing changes during the year, including a move of the field teams from Half Tree Hollow to Horse Point Landfill site, but a full team was in place by the end of March 2017 (see staff organogram in Appendix 3).

1.4. St Helena experienced an unprecedented lack of rainfall this year leading to a period of island wide drought and water restrictions which really started to impact on the LEMP project in November 2016. Investment in significantly more irrigation materials than was initially anticipated, reducing propagation in our nursery and, in November 2016, placing a pause on planting out into field sites helped the LEMP team manage the situation. Another key to maintaining plant survival was the use of the LEMP water bowser and permission to continue to utilise water from borehole 5.

2. Partnerships

2.1. The LEMP continued to work in partnership with a range of on and off island partners. The move to ENRD aimed to further develop relationships with other relevant departments within that directorate in particular. Stakeholder workshops and site visits were held during the year and received input from a range of on island partners including EMD, the Trust, Basil Read, the Airport Directorate and the Project Management Unit (PMU). These workshops aimed to review LEMP works to date and consult on future priorities (see Appendix 2, photo 2.1). LEMP also supported both EMD and the Trust, as well as other partners, throughout the drought by transporting water using the LEMP water bowser.

2.2. Environmental Management Division (EMD)

LEMP continued to fund two full time members of staff to work on LEMP related activities such as seed collection, sorting and storage, plant propagation as well as nursery and living gene bank maintenance to support EMD in achieving agreed deliverables. Work was completed on revising the existing SLA outlining these deliverables for 2017/18 and the revised SLA will be signed in the new financial year.

The island-wide drought conditions resulted in poor seed yield in wild endemic sites and EMD's living gene banks, raising concerns for future planned LEMP restoration activities which are reliant on seed provision from EMD. The drought also negatively impacted seed germination and plant propagation for EMD's agreed LEMP activities: supplementary planting of EMD's living gene banks and production for LEMP planting. LEMP supported EMD during the drought

and subsequent water restrictions through the loan of two large water storage tanks and supplementing the nursery water supply with the LEMP water bowser, and despite the drought EMD propagated and provided LEMP with more than 7000 plants.

EMD staff participated in LEMP consultation activities and LEMP will continue to work with EMD to identify priority sites for compensatory works. The first large scale piece of compensatory works was started with EMD, the St Helena Nature Conservation Group (SNCG) and LEMP working in partnership though the development of a joint Memorandum of Understanding to support conservation works at Peak Dale, the largest remaining natural gumwood (*Commidendrum robustum*) forest site. Works included the provision of a stock proof fence around the site to protect regenerating seedlings from grazing and the provision of gumwoods for supplementary planting.

The LEMP also entered into an agreement with EMD for long-term use of vacant space at the Horse Point Landfill Site to set up a second operational field base. This base is closer to the majority of the LEMP rehabilitation works, and resulted in improved efficiencies in staff time and resource management.

2.3. St Helena National Trust (The Trust)

Re-construction of a 10m section of the historic Great Wood Wall, which once enclosed and protected the remnant endemic vegetation surviving in Longwood, was completed by the Trust in August. The wall is built from local stone and located at the Weather Station junction on the edge of the Millennium Forest. This heritage feature adds value to the wider landscape and provides an educational tool for locals and visitors to enjoy (see Appendix 2, photos 2.2 and 2.3).

Two additional contracts were awarded to the Trust this year. The first was to deliver reinstatement works in three LEMP rehabilitation zones adjacent to the Millennium Forest. This involves approximately 1,800m of rabbit proof fencing, 5,000m^2 covered by irrigation, and provision and planting of 10,000 endemic plants. The fencing and irrigation materials were provided by LEMP. The contract progressed well with the practical fencing works; however, due to the island wide nursery issues with seed germination and plant production, the contract had to be extended to the next financial year.

The second contract was for the Trust to monitor endemic wirebird (*Charadrius sanctaehelenae*) activity near LEMP zones, and to provide a programme of rodent control and monitoring in LEMP areas being impacted by rodent predation and damage to irrigation lines.

The Trust was able to facilitate provision of a City & Guilds Level 2 NVQ in Work-based Environmental Conservation to one LEMP Conservation Worker. The Trust also continues to provide woodchip mulch material for habitat restoration purposes, with just under 18m^3 of mulch collected by LEMP throughout the year. This material is crucial in water retention and weed suppression within the restoration sites.

2.4. AECOM

Throughout the year AECOM's main focus was on the development of the LEMP's long-term management plan and supporting monitoring protocols and templates; technical support and advice was also provided on request.

The annual update to the Landscape Detailed Designs (LDDs) was completed incorporating comments and feedback from LEMP staff in preparation for final handover in 2017/18.

2.5. Basil Read

In 2015/16 variation order 37 (VO37) transferred responsibility for reinstatement planting and ongoing maintenance from Basil Read to SHG. Basil Read, however, remain responsible for the initial ground preparation and landscaping works. Regular meetings and site visits were held with Basil Read to agree ground preparation, landscaping works, and sign-off of a number of sites from the airport terminal along the airport access road to Mulberry Gut, before handover to LEMP for revegetation.

There was a formal handover of the planted beds at the airport terminal precinct to the airport staff who took responsibility for maintenance of the plantings; LEMP retains responsibility for replacing plants as required. Meetings were also held to agree the remaining and future LEMP works required in the area (see Appendix 2, photo 2.4).

LEMP took delivery of outstanding materials from the VO37 agreement (including irrigation and fencing materials) from Basil Read. LEMP also benefitted from a donation of shade netting originally intended for use at the airport but no longer needed there; this provided valuable wind protection to LEMP plantings (see Appendix 2, photo 2.5). Basil Read supported LEMP within the drought period with water bowsering when the LEMP bowser underwent protracted repairs and maintenance, and also kindly supported LEMP with transport and placement of two heritage cannons in front of the Terminal building.

2.6. Department for International Development (DfID)

The DFID Deputy Programme Manager for St Helena, visited St Helena in October 2016 as part of the overall airport project and spent a day visiting LEMP offices and rehabilitation sites. Positive comments were received on the visual impact LEMP is already having in terms of rehabilitation of the previous construction areas.

The LEMP Logical Framework was completed and agreed. This presents the outcome and outputs of the project alongside annual milestones, and sets out the history, initial challenges faced, and future aspirations of the LEMP. The log frame will be reviewed and updated annually by the project manager and team leader.

2.7. Other

Following the development of the MOU between EMD, SNCG and LEMP to work together to protect the Peak Dale gumwood forest a contract was awarded to a local business in October to install the livestock proof fencing. This contract covered invasive species clearance works, removal of sections of remaining old fence, and installation of a new fence to agreed specification over a length of 1,562m. LEMP's contribution to the project involves approximately 70% of the contract cost, additional materials as required, and managing the contract. Due to heavy rains creating unsafe working conditions toward the end of the financial year this project was delayed and thus the contract was extended into the following year (see Appendix 2, photo 2.6).

A collaborative project was also successful to place two 3 tonne cannons outside the Airport Terminal entrance. LEMP contracted a local carpenter to construct two wooden carriages and the St Helena Heritage Society loaned two renovated cannons on a long-term basis. These were moved into position in front of the terminal building with the support of Basil Read and St Helena Airport staff (see Appendix 2, photo 2.7).

During the year 4,124 plants were received from private sector nurseries.

3. Delivery

3.1. Staff

The LEMP project experienced a high staff turnover during the year with 13 new staff joining the project to fill new or vacant roles and 10 members of staff leaving the project. Staffing changes involved several key management staff, including the project manager and two team leaders. However, a number of recruitment rounds in early 2016 saw the LEMP team reach full capacity, with four complete field teams by July 2016, and despite changes throughout the year the team was fully staffed at the end of March 2017 (see Appendix 3 for the staff organogram).

All staff transferred to a new institutional home within SHG on 1 October 2016. Staff transferred from the Airport Directorate to the Environment and Natural Resources Directorate (ENRD) to reflect a more appropriate long term organisational structure.

Capacity building in staff is a key legacy of the LEMP project. During this year staff members engaged in six formal training events, including manual handling, public speaking, pesticides training, Emergency First responder training and IT courses, representing approximately 45 training days in total. In addition staff engaged in reciprocal team days where EMD staff worked with LEMP staff to support work at LEMP sites and in return LEMP joined the Peaks team for a day (see Appendix 2, photo 2.8). Two members of staff also engaged in longer term training programmes; NVQ level 2 in Conservation and the ILM Level 3 Leadership and Management training. LEMP also offered a full time volunteer work placement through the Occupational Therapy work scheme.

3.2. Infrastructure & Facilities

LEMP established a new operational field base at Horse Point Landfill site and three field teams moved into this facility in September 2016. Field base facilities include a porta-cabin style office unit and two 20ft containers for tool storage and a staff rest area which were purchased from Basil Read. This move significantly reduced staff travelling time from the HTH base out to rehabilitation sites making the team more efficient (see Appendix 2, photos 2.9).

At the HTH nursery facility a second mist bench was installed to increase propagation capacity and reduce staff time in watering by hand. A 20ft container was also purchased and sited to increase storage capacity at the nursery.

3.3. Surveys

The LEMP Ecologist and Project Manager developed and finalised the methodology for formal vegetation surveys to monitor the success of LEMP plantings. The LEMP Ecologist began the process of biological monitoring which involves taking a baseline survey of marked plots and recording number of endemic plants and percentage cover of all species. Survival rate and changes in abundance of species can then be monitored as further biannual surveys are completed.

The LEMP teams also initiated a formal process of quarterly monitoring. This involves a thorough check of all completed rehabilitation sites to monitor fence condition, irrigation functionality, the condition of plants and to identify any other maintenance issues.

The LEMP Ecologist also completed the second photographic survey for the project. This involved annual photographs of key LEMP sites taken from the same point to enable a review of progress year on year.

3.4. Practical Works

The Half Tree Hollow nursery successfully propagated and potted on over 27,000 plants throughout 2016-17, unfortunately severe losses in the nursery meant significantly less survived to be planted into LEMP rehabilitation sites. A number of factors contributed to the plant losses, including pests and diseases, drought and rehabilitation sites not being ready to be planted at the expected time. LEMP also had a backlog of plants from the previous year which were prioritised for planting. LEMP also received plants from private sector nurseries and from the EMD nursery at Scotland.

In 2016/17 LEMP completed fencing of 16 sub plots across five LEMP zones at Zone 6 - Mulberry Gut, Zone 9 - Bottom Woods, Zone 11 - Cook's Bridge and Zone 13 - airport terminal beds. Fencing was also completed at the first compensatory area, Zone 22 – Pipe Ridge scrubwoods (*Commidendrum rugosum*) meaning a total area of 2.3 hectares was enclosed by 2.2km of fencing.

Just over two hectares of land were laid with drip irrigation and planted using more than 16,000 plants. Despite the severe drought the survival rate of plants in the field to date was estimated at an average of 69% across all species, which included some severe losses of samphire on a single site, Dry Gut, which were initially planted without rabbit protection and were subsequently heavily grazed.

In addition to the LEMP plants EMD produced more than 7,000 plants for LEMP, of which approximately 95% were planted out by EMD into permanent seed orchards, safeguarding endemic species for the future. The remainder were planted in LEMP rehabilitation zones.

Plans for planting in Rupert's valley were delayed as construction works continued in that area. Rather than risk losing the ornamental plants specifically propagated for these restoration areas the LEMP gifted plants to the residents of Rupert's Valley in recognition of the impact and inconvenience airport construction activities have had on the community. At a special event organised by airport contractor, Basil Read, for the Rupert's Valley residents to visit the new permanent wharf, 32 lemon trees (*Citrus x limon*), 33 money plants (*Crassula ovata*), 36 African lilies (*Agapanthus praecox*) and 14 hibiscus (*Hibiscus rosa-sinensis*) were chosen by Rupert's residents.

3.5. Challenges

Drought

The island wide drought on St Helena created considerable challenges this year. Propagation was scaled back at both the EMD nursery and at the LEMP nursery to conserve water and no planting took place between November 2016 and January 2017 for the same reason. This meant that progress on a number of LEMP sites was delayed and teams were required to focus on other tasks such as fencing and irrigation in preparation for planting rather than the planting itself. In some cases progress was further delayed by sites not being ready for handover following ground preparation after construction activities finished. Had LEMP been able to progress planting this would not have been a major issue, but as the teams needed to focus on other tasks it created further project delays. A large amount of staff time was taken up with activities to irrigate plants during the drought through laying irrigation networks and transporting water from borehole 5. Additional project expense was incurred with the need to invest in substantial amounts of additional irrigation equipment. Heavy plant losses were experienced in the nursery as seedlings could not be planted into the field and were held too long at the nursery where they were more susceptible to pests and diseases and risked becoming pot bound.

Staffing and retention
The LEMP project experienced a high turnover of staff during 2016/17 with 10 staff leaving the project and 13 new members of staff starting. This meant a reduced staff resource while there were vacancies and put additional pressure on other staff during the induction of new starters. LEMP also experienced staff shortages during periods of significant absence with maternity leave and staff illness. However, by the end of 2016/17 the staffing team was more stable and it is anticipated that this will not be a major issue moving forwards.

Rabbits
Rabbits have been a significant issue for LEMP sites in the past. The implementation of rabbit proof fencing has proved very effective but this is a costly solution that is not appropriate for all sites and which add to the ongoing maintenance resource required for sites where it is installed.

Invasive species
Dealing with invasive species has become more of a challenge over 2016/17 for a number of reasons. New sites are being worked on where invasives are a major issue and following the drought the wet, warm weather led to a proliferation of weeds, significantly increasing the time the LEMP staff team are required to spend on zone maintenance. In addition, the LEMP Ecologist identified two species of iceplant from Namibia that are new to St Helena and have caused biosecurity concerns. It is likely that the plant was imported in Namibia sand which was brought in for construction purposed. Staff from Basil Read, LEMP, EMD and the biosecurity team have all be involved in removing and disposing of the plant when it is found.

3.6. Public Relations/Communications

Monthly highlight and progress reports were produced for partner stakeholders.

The wider Airport Project held quarterly Stakeholder Engagement Forums throughout the year; LEMP representatives were present to provide updates on progress and obtain feedback on future restoration plans.

Presentations and site visits were provided to various stakeholders throughout the year, including a workshop for key stakeholders to review LEMP progress and contribute to future plans and a presentation to SHG Elected Members and senior management on LEMP progress and forward plans.

The LEMP hosted students from Harford Primary school to get involved in planting on one of the LEMP sites in October 2016:
(http://www.sainthelena.gov.sh/wp-content/uploads/2013/01/Ambassador-Newsletter-November-2016.pdf).

Updates on LEMP progress were also provided through local media, via newspaper articles or features in the AAO Airport Update Newsletter and ENRD newsletter. Further information can be found through the following links:

- Air Access website http://www.sainthelenaaccess.com/news/
- St Helena Independent newspaper http://www.saint.fm/the-independent/
- St Helena Sentinel newspaper http://www.sams.sh/L2_sentinel.html

4. Future Works

4.1. LEMP will continue to place a major focus on reinstatement, maintenance and monitoring of high-profile areas along the access road. As momentum increases and more sites are handed over following ground preparations it is anticipated that a number of rehabilitation sites will be completed.

4.2. Key compensatory and rehabilitation contracts at Peak Dale and the Millennium Forest will be completed. It is also anticipated that key actions for the remaining compensatory sites will be agreed with partners and a number of these actions will be started.

4.3. Significant work will be completed on forward planning for the project, to include restructuring the LEMP team as the project begins to downscale and the development of an overarching project plan, including work plans for the remainder of the project and completion of the LEMP long term management plan.

5. Conclusion

5.1. Despite numerous challenges faced during the year, 2016/17 has seen considerable progress as the LEMP project gains momentum, building on the ground work laid in the previous years. Good progress was made in delivering practical reinstatement works with over 30?,000 plants produced and more than 22,000 planted out. Numerous other sites have been fenced and irrigated ready for planting in early 2017/18.

5.2. Strong partnership working has also resulted in agreed priorities for LEMP rehabilitation sites moving forwards and in the identification of compensatory projects, with actions agreed for the majority of these areas. Key compensatory projects were started at Millennium Forest and Peak Dale and heritage projects were also completed at the terminal building (placement of cannons) and at Bottom Woods (reconstruction of part of the Great Wood Wall).

5.3. Increasing LEMP capacity by reaching the full complement of staff has increased productivity and also enabled significant workforce development and capacity building through training and development opportunities. It is expected that moving forward the staff team will build on these opportunities and continue to deliver high quality restoration and conservation activities.

Acronyms and abbreviations

AAO	Air Access Office (SHG)
AECOM	UK based environmental consultants (contracted LEMP project partner)
BR	Basil Read (Airport Project DBO contractor)
DBO	Design Build Operate (Contract)
DfID	Department for International Development (UK) (project funder)
EMD	Environmental Management Division (SHG)
ENRD	Environmental & Natural Resources Directorate (SHG)
HTH	Half Tree Hollow (Island District)
LEMP	Landscape & Ecology Mitigation Programme
LDDs	Landscape Detailed Designs
NGO	Non-Governmental Organisation
PMU	Project Management Unit
SHG	St Helena Government
SNCG	St Helena Nature Conservation Group
The Trust	St Helena National Trust (Island NGO)

Appendix 1 – Key LEMP achievements: Apr 2016 - Mar 2017

Achievement	Details	Date	Delivered by
Plants grown and seed collected	27,135 plants were grown at Half Tree Hollow nursery 7,067 plants were grown for LEMP at the EMD nursery at Scotland and planted 4,124 plants were supplied to LEMP from private nurseries	April 2016 to March 2017	EMD / LEMP
Site preparations	Ground preparation works were completed and signed off for seven LEMP specifications, including works at the airport precinct, Dry Gut, Tungi Flats, Cook's Bridge and at Bottom Woods.	April 2016 to February 2017	Basil Read
Rupert's Valley	LEMP gifted plants to the residents of Rupert's Valley in recognition of the impact and inconvenience airport construction activities have had on the community	June 2016	LEMP / Basil Read
Great Wood Wall	Restoration of a section of the Great Wall which used to enclose the remnant gumwood forest was completed	August 2016	SHNT
School visits	The LEMP hosted a day for students from Harford Primary school to get involved in planting on one of the LEMP sites.	October 2016	LEMP
Cannons at the Airport terminal	Two 3 tonne cannons, loaned by the St Helena Heritage Society, were placed out-side the Airport Terminal on wooden carriages constructed by a local carpenter.	February 2017	SHA, Basil Read, LEMP, Museum
LEMP rehabilitation plots	LEMP rehabilitation works were completed in 16 subplots across five zones (see table below)	April 2016 to March 2017	LEMP

Zone	Subplot	Name of area	Works	Fence length (m)	Area (m^2)	Irrigated area (m^3)	No. plants
6	6.1, 6.2	Mulberry Gut	Fenced, irrigated and planted	213	1,073	1,073	2,468 from 6 species
9	9.1C, 9.1D	Bottom Woods	Fenced, irrigated and planted	1,045	17,341	3,158	8,023 from 8 species
11	11.2	Cook's Bridge	Trial samphire plot, fenced and planted	275	2,194	NA	1,926 from 1 species
13	13.3-13.9, 13A, 13B, 13.21	Airport precinct	Fenced and planted. One bed also irrigated.	664	1,733	281 mainly hand watered	3,620 from 8 species
22	22.1, 22.1	Pipe Path Ridge*	Fencing to protect a natural population of scrubwoods	250	1,806	NA	NA
Totals				**2,447**	**24,147**	**4,512**	**16,037**
Additional plants in other LEMP sites (seed orchards and compensatory areas)							**6,838**
Total planted 2016/17							**22,875**

* Compensatory works

Appendix 2 – Photographic Review: April 2016 - March 2017

2.1 LEMP partners consultation workshop, Feb 17

2.2 Re-construction of a section of the Great Wood Wall, Aug 16

2.3 Completed section of the Great Wood Wall, Aug 16

2.4 Airport terminal beds, handed over to SHA staff

2.5 Use of shade netting as a windbreak for young plants, Jun 16

2.6 Fencing at Peak Dale compensatory site, Jan 17

2.7 Cannons placed at the airport terminal, Feb 17

2.8 EMD Peak & LEMP team building day, Jun 16

2.9 New site office at HPLS, Jun 16

2.10 Rupert's Wharf Open Day, Jun 16

Appendix 3 – LEMP Organogram: March 2017 (in-house)