Monthly Newsletter from The Environmental Management Division

July 2015

NEW WATER TANK FOR THE PEAKS NURSERY

A new water tank was installed at the Peaks Nursery at the start of July. The 1500-litre tank will almost double the water available for the nursery, which allows us to grow more plants for conservation of the fragile Peaks habitats. It's a step closer to drought-proofing the nursery during summer and is a great achievement for the Peaks Conservation Program.

Derek Youde, Ross Henry, William Crowie and Graham Leo installing the new tank at the Peaks.

Mike Jervois, Terrestrial Conservation Officer

UPDATE: DARWIN PLUS MRES CARBON SEQUESTRATION PROJECT

In early May I travelled to Dar es Salaam where I met with the Tanzania Forest Conservation Group and WWF Tanzania, who have both been involved in carbon monitoring and research projects. Following this I returned to the University of York, UK where I finished processing my remaining project soil samples. Once I had these results I was able to complete my data analysis and work on finishing my thesis write-up. After the thesis had been submitted to the University in mid-June and marked by my examiners, I then had to undergo an oral examination on my research project, which I successfully passed in late June.

Overall five carbon pools (see below) were assessed in six 20 x 20m plots and the data was then used to estimate totals for the entire Millennium Forest site. Key results from the research project are shown below:

- The bulk of carbon within the site was held in the **soils** with approximately **297.5 tonnes**
- Next was the **aboveground live biomass** (trunks, branches, leaves) with **52.15 tonnes**
- Estimations for the three remaining pools across the Millennium Forest were all much smaller amounts:
  - **Litter**: approximately **4.9 kg**
  - **Deadwood**: approximately **397.95kg**
  - **Belowground biomass** (roots): approximately **37.8kg**
- Overall, the study estimated a **total** of approximately **349.7 tonnes** of carbon to be currently stored within the Millennium Forest site.

What's next?

I'm now working with the St Helena National Trust and other stakeholders to find the best way to use the data to set up a local carbon offsetting scheme. Anyone who would like to know more about my research can contact me at Scotland.

Shayla Ellick, Species Conservation & Environmental Research Officer

STARTERS/ LEAVERS/ STAFF ACHIEVEMENTS

This month we have two new members of staff. We would like to welcome **Debby Parkinson**, our new Climate Change & Pollution Officer; and **Ross Leo**, our new Marine Conservation Worker under the Fisheries, Marine Tourism and Social Economics Darwin Plus Project.

Our part time Climate Change & Pollution Officers, **Ceri Sansom** and **Tim Troman**, who both job-shared the role, have now left EMD. Ceri and Tim were both valuable members of the team and we wish them good luck for the future.

Our Environmental Risk Manager, **Mike Durnford**, completed an Institute of Leadership and Management (ILM) Level 7 Diploma in 'Strategic Leadership and Executive Management' in May 2015. Congrats Mike!

HIGH SCHOOL STUDENTS VISIT THE PEAKS

Students from Prince Andrew School visited the Peaks on Friday 10 July. The students toured the conservation areas and learnt about our rare native plants as part of their science class. The tour concluded with a visit to the nursery and the planting of several redwood trees.

Mike Jervois, Terrestrial Conservation Officer

WORK UNDERTAKEN BY EMD THIS MONTH

- ✓ Waste Management Services information leaflet published
- ✓ Resource and Waste Management Options Appraisal (Commercial Recycling Business Case) developed
- ✓ Horse Point Landfill Site (HPLS) Operation Manual completed
- ✓ Feral Pigeon Monitoring Report completed
- ✓ Incinerator Operating and Monitoring Manual completed
- ✓ Pigeon Management Assessment
- ✓ IUCN Red List accounts
- ✓ Environmental Assessments
- ✓ Various Darwin Plus Projects
- ✓ Support to Airport Project
- ✓ Seabird monitoring and analysis
- ✓ Met Office Global Upper Atmosphere Project
- ✓ Endemic seed collecting
- ✓ Endemic fern propagation project
- ✓ Habitat restoration and maintenance
- ✓ (Draft) Environmental Protection Ordinance

AN INTRODUCTION TO DEBBY PARKINSON: EMD'S NEW CLIMATE CHANGE AND POLLUTION OFFICER

My name is Debby Parkinson and I have been living here on St Helena for 11 months. I have just been appointed into the role of Climate Change and Pollution Officer within the Environmental Risk Management Section, a role previously job-shared between Ceri Sansom and Tim Troman.

I have been appointed at a really exciting time, when the landfill site at Horse Point has been redeveloped, the airport certification process is well underway, and the phenomenon of climate change is well embedded into most people's understanding, along with a wish to actively do something about it. My job will evolve as the needs of the island change, and I am looking forward to the challenges this will bring.

Previously to this I have worked in a number of widely different industries. I am a Chartered Librarian and indexer and have worked in libraries in schools, organisations and colleges. I have managed the building of an eco-house in the UK and worked in the insurance industry as a commercial underwriter. Until we moved here I was actively involved in growing and producing as much as possible of our family's food. I like to be involved and keep busy and have been part of a number of different groups in the UK including the Transition Towns initiative in which communities plan to build resilience into infrastructures to enable families to cope better with the effects of climate change and the inevitable time that oil supplies dwindle.
Since being on island I have continued to keep busy and have volunteered with the libraries and other organisations, have learned to dive, begun to learn to tap dance and play the double bass and have made major in-roads into writing the novel I have been putting off for years. All this whilst taking part in some of the most amazing walks in spectacular scenery. I have begun to understand how fragile and precious the environment is here, and I feel privileged to have been given the opportunity to try to help protect and enhance the island.

Debby Parkinson, Climate Change and Pollution Officer

UPDATE ON THE ARTIFICIAL NEST CHAMBERS (ANC's) ON EGG ISLAND

During May last year and earlier this year a network of artificial nest chambers or ANC's were installed on Egg Island to increase the amount of available breeding habitat for the storm petrel populations and to enable the safe monitoring of breeding birds through easier accessibility. Storm petrels are notoriously difficult to monitor due to their nocturnal burrow nesting behaviour and it is hoped that the provision of ANC's will enable us to understand their breeding ecology. The storm petrels around St Helena are known to breed at two distinctive times of year and in June, what is called their "cool" season all the ANC's were checked for occupancy. An impressive 40% (16 out of 40) of the ANC's that were installed in 2014 were occupied by storm petrels and only one from the ANC's installed earlier this year. All but one of these were incubating or chick rearing. This is an incredibly quick colonisation which we expected to take years and highlights how important potentially the provision of suitable breeding habitat on Egg Island could be to the storm petrel populations. The next "hot" season in November-January should also prove interesting so watch out for more updates.

Annalea Beard, Marine Conservation Assistant

ST HELENA METEOROLOGICAL OFFICE

Preparing & launching of the 'Totex TX800' Weather Balloon with attached Vaisala Radiosonde RS92

The MET Office also known as the Weather Station relocated to Bottom Woods in 1976 having previously been sited for data collection at Hutt's Gate. It is an SHG Managed Station in partnership with the UK MET Office a world leader in providing weather and climate services. An observational site for climatic data collection operates by monitoring both surface & upper air systems using UK supplied equipment.

Observed surface data is collated by identifying cloud types/formations/heights, measuring ambient temperatures, pressures, wind direction/speed, rainfall, sunshine, and humidity are all inputted into the Meteorological Monitoring System (MMS). Upper air data is measured by the daily weather balloon launch at 1115GMT. The supplied system known as a Radiosonde RS92-SGPA manufactured by Vaisala in Helsinki, Finland measures accurate ambient temperatures, humidity, wind direction/speed and location. The Hydrogen filled balloon when launched typically rises at 5.5m/s providing data every 2 seconds, whilst generally reaching a height of 33000m.

All surface and upper air data is transmitted to the UK MET Office for the use by forecasters/scientists for their global monitoring processes.

Lorimar Bennett, Meteorological Station Manager

UPDATE: DARWIN PLUS 'SECURING ST HELENA'S RARE CLOUD FOREST TREES AND ASSOCIATED INVERTEBRATES' PROJECT

The cloud forest of St Helena is habitat for the highest number of endemic species anywhere in the UK Overseas Territories. Sadly our cloud forest is disappearing fast due to invasive plants like New Zealand flax, whiteweed, bilberry, cinchona, and sweet spoor. Even these weeds are being covered by more weeds such as fuchsia, Mexican creeper, blackberry, buddleja, and pheasant-tail fern. The result is that our remaining endemic trees on the Peaks are being shaded out and literally 'squeezed' to death.

Figure 1. Likely a new endemic species. Another reason to conserve False Gumwood and its habitat for it is the only place where this animal is found

This Darwin Plus funded project aims to locate and clone the remaining few cloud forest trees, as well as recording their associated invertebrates. It's a process of discovery and links back directly to our on-going conservation work.

The project focuses primarily on the four rarest trees, all critically endangered: He Cabbage, Dogwood, Whitewood and False Gumwood. The project aims to clone each species and plant them in a safe and convenient place on the Peaks. We aim to create 'field seed-banks' which are accessible and able to be kept free of weeds. It's important to grow these rare species in 'field seed-banks' so that we can maximise the genetic strength of each tree into our revegetation projects. We need genetically strong trees that can be planted back into the wild, to give them the best chances to avoid extinction. False Gumwood is the rarest of the four species, with only six plants remaining in the wild. These six trees are home to very high concentrations of endemic invertebrates, some of which were previously unknown (see Figure 1).

Spiky Yellow Woodlouse is a rare endemic invertebrate which was found living on dogwood and whitewood trees which were completely surrounded by a 'sea' of invasive plants (see Figure 2). Until now, the Spiky Yellow Woodlouse was thought to prefer intact black cabbage-tree woodland and was only recorded on High Peak. We have significantly expanded the known range and habitat preference of this species – an exciting new discovery for science.

Figure 2. Spiky Yellow Woodlouse found hiding in the canopy of dogwood and whitewood trees

All of this information will be a great benefit to the Terrestrial Conservation Section and allow better informed habitat management decisions. We look forward to sharing more news from the project in the future.

(All photos courtesy of Lourens Malan).

Lourens Malan, Cloud Forest Project Manager

Figure 3. Leaf hoppers are some of the most interesting endemic bugs that can be seen. Amazingly, the stripy one on the far right has only ever been seen on whitewood.

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