



# ENVIRONMENTAL MANAGEMENT SYSTEM FOR ST HELENA AIRPORT

## ANNUAL ENVIRONMENTAL REPORT: 2018-2019

### DOCUMENT INFORMATION

ORGANISATION	AREA	DOCUMENT TYPE
SAIEA	Operations	Report

### DOCUMENT CONTROL NUMBER

H L E - S A I E A - 1 6 0 0 - E N - R P T - 0 0 2 3 - 0

Contract No      Organisation      Area Code      Discipline      Document Type      Unique No      Revision

### DOCUMENT CHANGE RECORD

REV	DATE	SECTION (S) OF CHANGE	DESCRIPTION OF REVISION
A	2019-12-19	All	First draft for comment
B	2019-12-19	All	Second draft for comment
C & 0	2020-02-04	All	Final

PREPARED	REVIEWED	APPROVED	ACCEPTED
<b>Bryony Walmsley</b>	<b>James Kellett</b>	<b>Marc Fowler</b>	<b>Gwyneth Howell</b>
<b>Environmental Consultant</b>	<b>Compliance Manager</b>	<b>RFFS Manager</b>	<b>CEO &amp; Accountable Manager</b>

## **ANNUAL ENVIRONMENTAL REPORT FOR THE ST HELENA AIRPORT 2018 - 2019**

---

**February, 2020**



Photo: B Walmsley

**Prepared by  
Bryony Walmsley**

## ANNUAL ENVIRONMENTAL REPORT FOR THE ST HELENA AIRPORT 2018 - 2019

### TABLE OF CONTENTS

<b>FOREWORD</b>	<b>4</b>
<b>ACKNOWLEDGEMENTS</b>	<b>6</b>
<b>EXECUTIVE SUMMARY AND KEY PERFORMANCE INDICATORS</b>	<b>8</b>
<b>1 INTRODUCTION</b>	<b>14</b>
<b>2 AIMS AND OBJECTIVES OF THE ANNUAL ENVIRONMENTAL REPORT</b>	<b>14</b>
<b>3 SUMMARY OF AIRPORT ACTIVITIES DURING THE YEAR</b>	<b>16</b>
3.1 Notable events and milestones	16
3.2 Aircraft and passenger movements	17
3.3 Certification	18
<b>4 ENVIRONMENTAL GOVERNANCE STRUCTURES</b>	<b>19</b>
4.1 Environmental Management Team	19
4.2 Environmental Management Plans	20
4.3 Compliance Monitoring and Auditing	21
4.3.1 Site inspections	21
4.3.2 Annual audits	23
4.4 Meetings and Reporting	25
<b>5 EMPLOYMENT AND STAKEHOLDER ENGAGEMENT</b>	<b>26</b>
5.1 Employment and Employee Development	26
5.2 Complaints	26
5.3 Open Days and Stakeholder Engagement	26
<b>6 ENVIRONMENTAL MANAGEMENT ACTIVITIES</b>	<b>27</b>
6.1 Studies Commissioned	27
6.2 Landscape and Ecological Mitigation Plan	27
<b>7 ENVIRONMENTAL MONITORING</b>	<b>32</b>
7.1 Monitoring Programme	32
7.2 Monitoring Results	32
7.2.1 Air quality	32
7.2.2 Water quality	34
7.2.3 Waste management	35
7.2.4 Resource Use	37
7.2.5 Birdstrike risk monitoring	38
7.2.6 Wildlife monitoring	40
7.2.7 Biosecurity	44



7.2.8	Weather	46
-------	---------	----

<b>8</b>	<b>CONCLUSIONS</b>	<b>49</b>
----------	--------------------	-----------

**LIST OF TABLES**

Table 1: Environmental management team (as at 30 <sup>th</sup> June 2019)	19
Table 2: Incident rating scale	22
Table 3: Status of close-out of audit findings	24
Table 4: Monitoring frequency	32

**LIST OF FIGURES**

Figure 1: Map of island showing the location of the airport, navigational aids and communications systems	15
Figure 2: Number of arriving and departing passengers from July 2017 to June 2019	18
Figure 3: Environmental reporting structure	20
Figure 4: Incident ratings	22
Figure 5: Number of incidents by area	23
Figure 6: Incidents by type	23
Figure 7: Audit findings	24
Figure 8: Monthly average dust measurements for bucket 1	33
Figure 9: Monthly average dust measurements for bucket 2	33
Figure 10: Hazardous waste production per month, 2018-19	36
Figure 11: Non-hazardous waste produced per month, 2018-19	36
Figure 12: Monthly potable water consumption at the airport	37
Figure 13: Monthly energy consumption	38
Figure 14: Fairy tern monitoring in northern runway airspace	38
Figure 15: Composition of birds observed in the southern airspace	39
Figure 16: Monitoring of Red-billed tropicbirds in the southern runway airspace	40
Figure 17: Birds (other than Red-billed tropicbirds) occurring in the southern airspace	40
Figure 18: Birds (excluding the Wirebird) seen on the airfield, 2018-19	41
Figure 19: Wirebird observations on the airfield	42
Figure 20: Animals observed on the airfield	43
Figure 21: Biosecurity monitoring per airport area, July 2018 to June 2019	44
Figure 22: Composition of species caught, July 2018 to June 2019	45
Figure 23: Mean 10-minutes wind speed at monitoring points along runway	47
Figure 24: Maximum 10-minute gusts at monitoring points along the runway	47
Figure 25: Monthly and long-term average rainfall at Bottom Woods Meteorological Station and at the airport, 2017-19	48
Figure 26: Hours of sunshine per month a Bottom Woods Meteorological Station, 2018-19	49

**FOREWORD**

St Helena Airport Limited has an established and embedded Environmental Management System (EMS) to ensure operations and activities at the airport are conducted in an environmentally responsible manner and to ensure St Helena Airport's environmental policy is achieved. The EMS



translates commitments made in the Environmental Policy into actions delivered by our programmes and Standard Operating Procedures, managing the community's airport assets responsibly, leading on environmental stewardship and contributing to the island's social well-being and quality of life.

**Gwyneth Howell**

CEO & Accountable Manager



Photo: St Helena Government Airport Directorate



## **ACKNOWLEDGEMENTS**

A document such as this always requires input from a number of people and I would like to thank the following: Gwyneth Howell, Gerald Yon, Marc Fowler, Jaie-Jaie Buckley and James Kellett of St Helena Airport, Julie Balchin (Biosecurity Officer), Shayla Ellick of SHNT, the Bottom Woods Met Office and the Airport Met Office.

In addition, I would like to express my gratitude to Elaine Hopkins for all logistical arrangements and to Tavonga Chikwenhere for contract management.

Photographs are courtesy of the St Helena Government Airport Directorate, SHNT LEMP team, Airport staff and B Walmsley.

## LIST OF ACRONYMS

AAM	Accountable AirPM Manager
ACM	Airport Contracts Manager
ACMU	Airport Contracts Management Unit
AER	Annual Environmental Report
AFF	Airport Fuel Facility
ANRD	Agriculture and Natural Resources Division
ASSI	Air Safety Support International
ATC	Air Traffic Control
DVOR	Doppler VHF Omni-Directional Radar
EMD	Environmental Management Division (of SHG)
EMS	Environmental Management System
ENRPD	Environmental, Natural Resources and Planning Directorate
EO	Environmental Officer
FMC	Fuel Management Contractor
FTR	Fire Training Rig
HPLS	Horse Point Landfill Site
IATA	International Air Transport Association
ISO	International Standards Organisation
kg	kilogram
KPI	Key Performance Indicator
kWh	kilowatt hour
LEMP	Landscape and Ecological Mitigation Plan
m	metre
m <sup>2</sup>	square metre
m <sup>3</sup>	cubic metre
mg	milligram
ml	millilitre
mm	millimetre
NOTAM	Notice to Airmen
PBP	Prosperous Bay Plain
RFFS	Rescue and Fire Fighting Service
SHAL	St Helena Airport Limited
SHG	St Helena Government
SHNT	St Helena National Trust
SOP	Standard Operating Procedure
STP	Sewage Treatment Plant
TSP	Total Suspended Particulates
UK	United Kingdom
WHMP	Wildlife Hazard Management Plan
WMP	Waste Management Plan



## **EXECUTIVE SUMMARY AND KEY PERFORMANCE INDICATORS**

This is the third Annual Environmental Report (AER) for St Helena Airport and the first for St Helena Airport Limited (SHAL), covering the period 1<sup>st</sup> July 2018 to 30<sup>th</sup> June 2019. The report's aim is to provide insights and feedback on the ongoing environmental management and monitoring programmes at the airport and to assess progress from year to year. The airport has in place an annually updated, ISO 14000-based Environmental Management System (EMS) to manage and monitor environmental issues. One of the fundamental principles of the EMS is 'continual improvement', so the AER allows us to take stock of our environmental performance, together with other management, audit and reporting functions which are described in this report.

The scope of this report covers all activities under the operational control of the Airport i.e. the airfield, Terminal and Combined Buildings, Fire Training Rig and all navigational aids. It does not cover any of the fuel facilities in Rupert's Valley or at the Airport, as these are under the control of the fuel management contractor (FMC), Penspen.

A set of Key Performance Indicators (KPIs) has been developed for the AER and these are grouped under the following headings:

- Legal compliance;
- Environmental management structures and reporting;
- Employment, community and stakeholder engagement;
- Environmental monitoring and performance.

For each KPI, an assessment rating has been provided:

- 'Yes' in green means that the target or goal has been achieved.
- 'Partial' in orange means that there has been progress made towards achieving the goal, or that the KPI has been partially achieved.
- 'No' in red indicates where the KPI has not been achieved in the current reporting period.

The table below provides a brief comment, with reference to the section in the report where the matter is discussed more fully.

Of the 30 KPIs identified for the purposes of this AER, 24 (80%) have been achieved, one has only been partially met and five have not been fulfilled. This is a lower level of performance than last year due mostly to factors beyond the control of SHAL. The Hospital Laboratory did not have a qualified Technician for seven months of the reporting period; there were staff shortages in the Department of Public Health and there were significant delays in the delivery of additional water testing equipment. Together these factors meant that two of the KPIs relating to water quality could not be met and a third could only be partially achieved.

Other non-compliances include:

- Breakages in the water pipeline feeding the airport from Hutt's Gate Water Treatment Works have resulted in water losses. In a water-scarce environment, this is a challenge which needs to be rectified urgently;

- There have been significant increases in the number of pests and predators at the airport, resulting in considerable rabbit damage at the precinct beds, and an enhanced air safety risk due to the number of pigeons being attracted to the saltbush berries on the airfield;
- The ongoing presence of the newly introduced, invasive Namibian Ice Plant.

With our ever-expanding knowledge of environmental processes at the airport due to the ongoing monitoring programmes in place, we are now in a better position to predict these non-compliant situations and act proactively to prevent them from recurring.

#	KPI	Description	Assessment rating 2017-18	Assessment rating 2018-19	Comments
<b>LEGAL COMPLIANCE</b>					
1	Legal compliance with laws and regulations of St Helena	No non-compliance notices, stop orders or penalties have been issued in terms of environmental laws in force	Yes	Yes	Airport is compliant with all local laws and regulations
2	Compliance with international conventions, treaties, etc. relating to the environment	No incidents where St Helena fails to meet its international environmental obligations due to actions by the airport	Yes	Yes	Airport is compliant.
3	Compliance with all international aviation industry environmental laws and standards	No incidents of non-compliance with aviation industry environmental laws and requirements	Partial	No	It has not been possible to test for all the required IATA water quality parameters due to the late arrival of the analytical equipment and staff shortages at the Hospital Laboratory. See s. 7.6.2
4	Compliance with all relevant UK laws and standards (as listed in the Legal Register of the EMS)	No incidents of non-compliance with UK laws and standards	Yes	Yes	Airport is compliant
5	The Legal Register is reviewed and updated as and when required	The Legal Register is up to date	Yes	Yes	Last updated in February 2019
<b>ENVIRONMENTAL MANAGEMENT STRUCTURES AND REPORTING</b>					
6	The Airport's Environmental Policy is posted in	Policy is reviewed once per year	Yes	Yes	A framed poster of the Environmental Policy is posted in the Combined



#	KPI	Description	Assessment rating 2017-18	Assessment rating 2018-19	Comments
	public areas				Building and the Terminal Building
7	The Airport Risk Register is reviewed and updated on a quarterly basis	Environmental risks are updated quarterly	Yes	Yes	The Airport Risk Register, which includes environmental risks, is updated quarterly.
8	The environmental management team, as specified in the EMS is in place	Appointment and employment of the following positions throughout the reporting period: <ul style="list-style-type: none"> <li>• Environmental Officer</li> <li>• Assistant Environmental Officer</li> <li>• Environmental Consultant</li> </ul>	Yes	Yes	See s. 4.1
9	Reporting commitments achieved (as per requirements of the EMS)	100% completion of the following: <ul style="list-style-type: none"> <li>• Monthly EO reports</li> <li>• Annual update of EMS;</li> <li>• Annual audit;</li> <li>• AER.</li> </ul>	Yes	Yes	Monthly reports were submitted every month. The EMS was updated in February 2019. The annual audit was conducted in August 2019. The AER is contained in this document.
10	Monthly meetings held (as per EMS)	The EO attends all monthly airport meetings, and environmental issues are on the agenda	Yes	Yes	
11	Environmental monitoring systems are in place (as per the requirements of the EMS)	The following are monitored on a regular basis (as specified in the EMS): dust, water (potable water, effluent quality), waste quantities, resources use, seabirds, Wirebirds, pests, invasive species, climate, and	Yes	Partial	All aspects are being monitored as per the EMS except water quality due to the late delivery of testing equipment, staff shortages at the Laboratory and in the Dept. of Public Health. See Chapter 7.



#	KPI	Description	Assessment rating 2017-18	Assessment rating 2018-19	Comments
		biosecurity			
<b>EMPLOYMENT, COMMUNITY AND STAKEHOLDER ENGAGEMENT</b>					
12	Number of complaints received	No serious complaints received; Less than 3 minor complaints per month	Yes	Yes	No complaints have been received at all.
13	Employment of Saints	At least 50% of the permanent employees at the airport are Saints	Yes	Yes	85% of the permanent staff at the Airport are Saints. See s. 5.1
14	Environmental induction	All new employees, contractors and concessionaires at the airport receive environmental induction, including the environmental Code of Conduct	Yes	Yes	See s. 5.1
15	Environmental training	All new permanent airport employees receive training on the EMS and WHMP	Yes	Yes	
16	Access to Postbox walks is provided	Access to the Gill Point and King and Queen Rocks Postbox walks is provided	Partial	Yes	The Gill Point and King and Queen Rocks Postbox walks have been re-established. Tour operators need to contact SHAL for access to the King and Queen Rocks walk.
<b>ENVIRONMENTAL MONITORING AND PERFORMANCE</b>					
17	Incident log is kept and is up to date	An incident log is kept and all incidents are addressed as soon as practically possible	Yes	Yes	See s. 4.3.1
18	Environmental database	All monitoring data are entered onto the environmental monitoring database and it is up to date	Yes	Yes	See Chapter 7.
19	Impact on landfill	Adherence to the	Yes	Yes	As much waste as possible is

#	KPI	Description	Assessment rating 2017-18	Assessment rating 2018-19	Comments
	facilities	Waste Management Plan (WMP) to apply the waste mitigation hierarchy			re-used, recycled or minimised, but the scope for recycling on the island is limited due to economies of scale. Waste quantities and destinations are recorded each month. See s. 7.2.3
20	Safe disposal of hazardous waste	All hazardous waste must be handled, stored, transported and disposed of according to the procedures contained in the WMP	Yes	Yes	See s. 7.2.3
21	Minimise impact on Island water supplies	Airport to minimise use of island water supplies	Yes	No	Leaks in the pipeline have resulted in water losses. The water meters also break down on a regular basis for several months at a time and so it is not possible to monitor water consumption on a regular basis. See s. 6.2.4
22	Incidents of dust emissions over prescribed limit	No exceedances over permitted limits recorded	Yes	Yes	Dust emissions are much higher than in previous years but still within prescribed limits. See s. 7.2.1
23	Incidents of effluent discharges over prescribed limit	No exceedances over limits stated in the EMS are recorded	No	No	Without access to regular monitoring results, it is not known if the effluent from the sewage treatment plant meets the design specifications, but the test strip indicators suggest that some parameters e.g. nitrate, are still elevated. See s. 7.2.2
24	Incidents of significant accidental spills (oil, diesel, chemicals)	No level 3 incidents or greater involving accidental spills	Yes	Yes	



#	KPI	Description	Assessment rating 2017-18	Assessment rating 2018-19	Comments
25	Erosion of natural water courses	No evidence of significant erosion caused by uncontrolled runoff from the airport and its facilities	Yes	Yes	
26	Incidents of illegal driving, plant collection, animal trapping	No level 3 incidents or greater occurred	Yes	Yes	
27	Rare and endangered species affected	No level 3 incidents or greater involving biodiversity issues	Yes	Yes	
28	No increase in pests and predators noted	Pest and predator monitoring and control programme in place	Yes	No	Rabbit and pigeon numbers increased significantly at times in response to available food resources such as the common saltbush berries on the airfield (pigeons) and unprotected plants in the precinct gardens (rabbits). See s. 6.2 and s. 7.2.6.
29	No increase in invasive plant species and/or species which attract birds	Monitoring and weed control programmes are in place.	No	No	A proliferation of salt bush plants on the airfield attracted large numbers of pigeons until it was removed. See s. 7.2.7
30	Biocontrol measures are in place	No contaminated products allowed onto the island. Monitoring programme in place.	Yes	Yes	No alien species have been found in the invertebrate traps set up around the airport buildings by the Biosecurity Officers. See s. 7.2.7



## 1 INTRODUCTION

This is the third Annual Environmental Report (AER) for the St Helena Airport covering the period 1<sup>st</sup> July 2018 to 30<sup>th</sup> June 2019.

The St Helena Airport is located on Prosperous Bay Plain (PBP) on the eastern side of St Helena Island, a UK Overseas Territory in the South Atlantic Ocean (Figure 1). The Central Basin Nature Reserve lies immediately adjacent to the airfield to the west which provides a natural habitat for many endemic invertebrates, plants and lichens, as well as St Helena's only endemic bird, the Wirebird. Thus it is necessary to ensure that the environment on and around the airport is managed and protected in such a way as to minimise the impact of airport activities on the environment, but also to ensure that the safety of employees, passengers and the general public is not compromised in any way by environmental factors within the control of the Airport.

An ISO 14001-compliant EMS has been developed for airport operations and one of its commitments is to produce an AER to provide feedback to the public on the environmental management and monitoring programmes in place at the airport.

The scope of this report covers all activities under the operational control of the Airport i.e. the airfield, Terminal and Combined Buildings, Fire Training Rig (FTR) and all navigational aids. It does not cover any of the fuel facilities in Rupert's Valley or at the Airport, as these are under the control of the Fuel Management Contractor (FMC), Penspen.

## 2 AIMS AND OBJECTIVES OF THE ANNUAL ENVIRONMENTAL REPORT

This AER presents an overview of the environmental performance of the airport relating to the following aspects:

- Airport activities for the year (Chapter 3);
- The environmental governance structures (Chapter 4);
- Employment and stakeholder engagement (Chapter 5);
- An overview of some of the environmental work undertaken during the year (Chapter 6);
- Our environmental monitoring activities (Chapter 7); and
- The targets and challenges for the 2019-20 year ahead (Chapter 8).

A summary of performance and progress against key performance indicators is presented in the Executive Summary.



**ST HELENA AIRPORT**  
**HLE-SAIEA-1600-EN-RPT-00023**

Date: 2020-02-04

Rev: 0

Page 15 of 50



Figure 1: Map of island showing the location of the airport, navigational aids and communications systems



### 3 SUMMARY OF AIRPORT ACTIVITIES DURING THE YEAR

#### 3.1 Notable events and milestones

With the regular scheduled Airlink services between Johannesburg and St Helena, and St Helena and Ascension becoming the new normal, St Helenians had another notable event to celebrate during the reporting year, with the advent of an additional flight from Johannesburg on Tuesdays during the summer holiday season from December to April. As a result of this extra flight, December 2018 recorded the highest number of passengers arriving at the airport in one month – 696!

St Helena featured in two other notable aero-events during the year: a Pilatus PC12 arrived on the 17<sup>th</sup> January 2019 during an attempt to fly around the world (Plate 1); and a Citation C25B landed on 21<sup>st</sup> April 2019 as part of the first private flight to fly west to east from Brazil to Africa (Plate 2).



Plate 1: The Hon. Governor welcomes the pilots of the Pilatus PC12 Round-the-World flight (Photo: SHAL)



Plate 2: The West to East team landed in a Citation C25B on 23<sup>rd</sup> April 2019 (Photo: SHAL)

On 23<sup>rd</sup> April 2019, the St Helena Commonwealth Games team was given a warm welcome on their arrival at the airport after their long journey home from the Gold Coast in Australia (Plate 3).



Plate 3: The St Helena Commonwealth Games team on arrival home (Photo: SHAL)

One of the objectives for building an airport on St Helena was to facilitate the export of live tuna to world markets. The first tuna to be exported occurred during the reporting year, being sent to France and South Africa. Beer had to be imported by air during the summer holidays when the Island ran out



of beer after Christmas – it would have been a long, dry wait for the old RMS to deliver reinforcements!

Another interesting cargo item was the importation of three consignments of 1,000 day-old chicks.

### 3.2 Aircraft and passenger movements

A total of 128 fixed wing aircraft landed during the past year, which is more than the 80 aircraft which landed in the previous reporting period. This total was made up as follows:

Commercial flights:	84
Charters:	30
Medevacs:	5
Private flights:	5
Calibration flights:	2
Military flights:	2

The bulk of these flights involved Airlink's Embraer E190 jets, but the following aircraft were also hosted at the airport:

- Two Dassault Falcon 20s;
- Three Dassault Falcon 50s;
- Two King Air Beechcraft BE20s (to conduct calibration tests);
- Two Lear Jet L35s;
- 1 Bombardier Challenger 604
- Two Lockheed C130 Hercules military aircraft;
- One Citation CJ3;
- One Pilatus PC12.

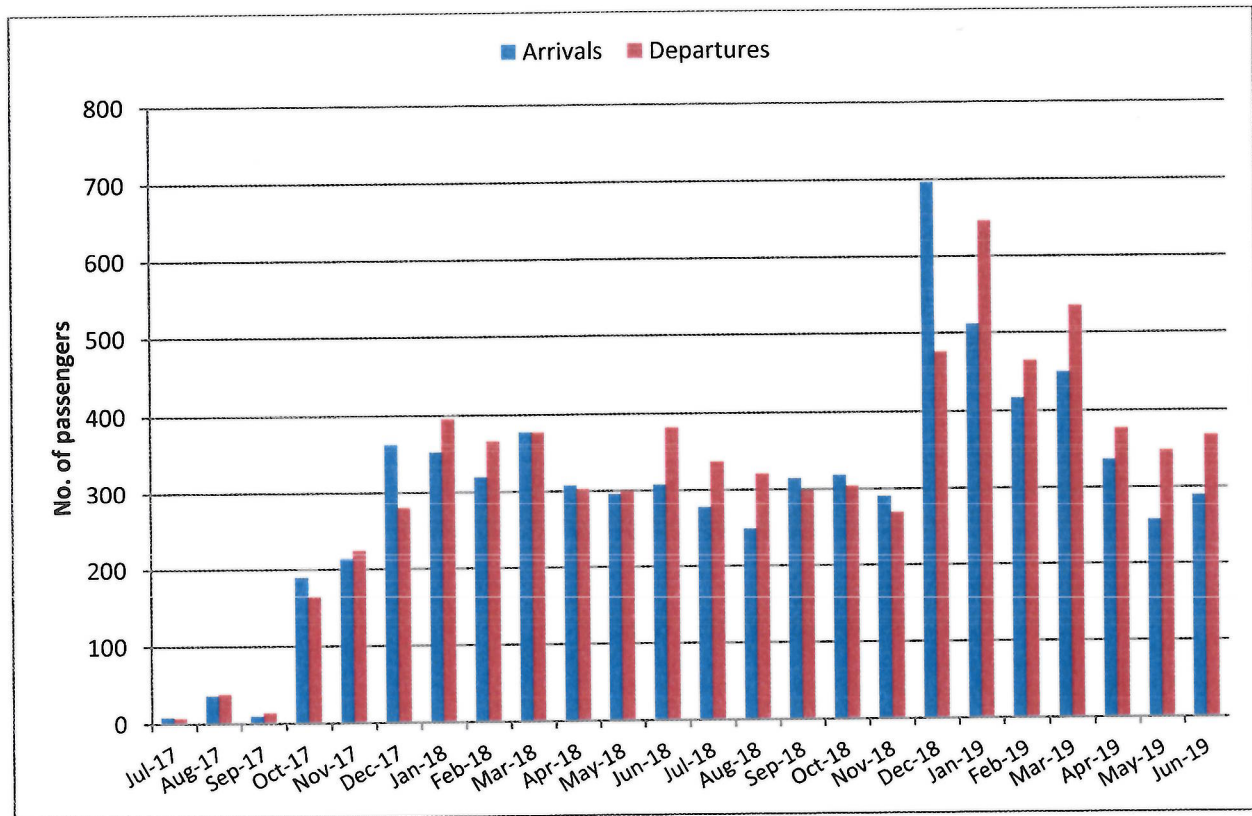


**Plate 4: One of the life-saving Medevac flights on the apron (1<sup>st</sup> March 2019)**

Six scheduled flights were delayed during the year due to low cloud/mist and/or high winds. Five of these delays involved the Johannesburg flights (for between 1 and 6 days) and one of the Ascension flights was delayed by a week. Most of these delays occurred in July to November 2018; one occurred in March 2019.

A total of 4,442 passengers arrived at the airport during the reporting period, which is a 40% increase over the previous year. A total of 4,732 departed, which is a 33% increase over last year (Figure 2). Not surprisingly, visitor numbers were highest during the summer, with the addition of the second Johannesburg flight as mentioned above.

There is a trend of more people leaving the Island than arriving and the net deficit for the year in question was 301, with 8 months showing more departures than arrivals (Figure 2).



**Figure 2: Number of arriving and departing passengers from July 2017 to June 2019**

A total of 30,944 tonnes of cargo was imported by air during the 12 month period – mostly food items such as vegetables, fresh fruit and dairy products, while 6,473 tonnes were exported – mostly tuna.

### 3.3 Certification

Throughout this period, the airport has successfully maintained its various operating permits:

- TAB Charters conducts bi-annual calibration flights using a King Air Beechcraft 200 aircraft to ensure that all the navigational equipment is working optimally;
- Air Safety Support International (ASSI) issued an open-ended Aerodrome Certificate on 5 November 2018;
- An open-ended Aeronautical Telecommunication Services Approval certificate was issued by ASSI on 5 October 2018.

## 4 ENVIRONMENTAL GOVERNANCE STRUCTURES

### 4.1 Environmental Management Team

An Environmental Officer (EO) has been appointed at the airport in order to ensure that airport operations comply with the EMS and the Wildlife Hazard Management Plan. The EO reports to the Rescue and Fire Fighting Services (RFFS) Manager, who stands in for the EO when he is away and all members of the RFFS team assist with site inspections and data collection. The previous EO, Dennis Stroud, was replaced by Jaie-Jaie Buckley in June 2019 when the former left the RFFS team. The environmental management team, as at the end of the reporting period, is shown in Table 1 and the reporting structure within the airport, as well as with relevant SHG agencies is provided in Figure 3.

**Table 1: Environmental management team (as at 30<sup>th</sup> June 2019)**

Name, position and location	Tasks
<b>James Kellett</b> Compliance Manager	Responsible for compliance with safety and quality standards, and communication.
<b>Bryony Walmsley</b> Environmental Consultant	EMS and WHMP updates; environmental audits; preparation of the Annual Environmental Report; review of monthly environmental reports; ongoing environmental advice.
<b>Marc Fowler</b> RFFS Manager	Stands in for EO when required, attendance at meetings, manager of environmental team.
<b>Jaie-Jaie Buckley</b> (EO)	Environmental Officer. Preparation of monthly reports, site inspections, data collection and collation, implementation of the EMS and WHMP.
<b>RFFS Team</b>	Site inspections, data collection.



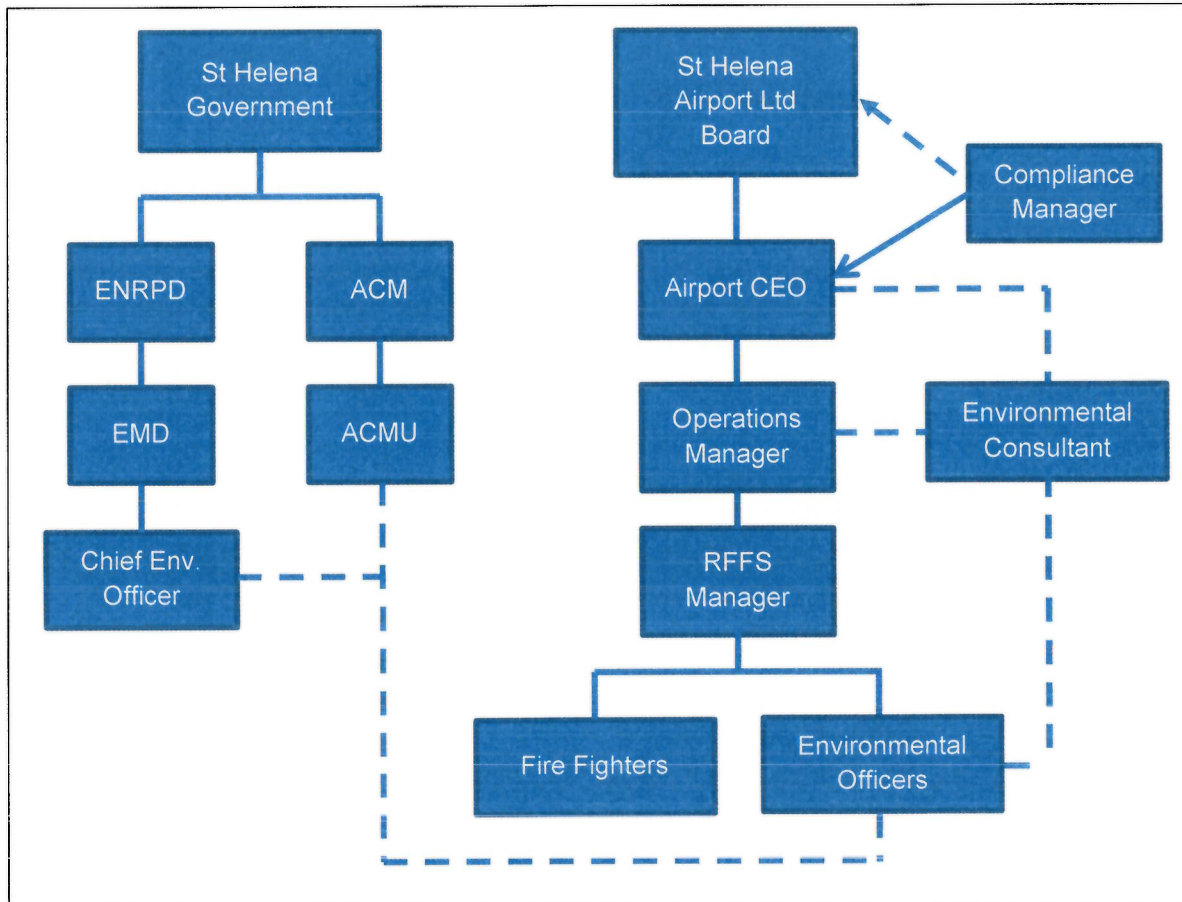


Figure 3: Environmental reporting structure

## 4.2 Environmental Management Plans

Environmental management at the airport is controlled by two key documents:

- The ISO 14001-compliant **Environmental Management System (EMS)** and its associated **Standard Operating Procedures (SOPs)** which are updated annually to ensure that the system is responsive to any changes; and
- The **Wildlife Hazard Management Plan (WHMP)**, which aims to avoid or minimise the risk of wildlife-plane incidents. This document is also reviewed and updated annually.

These two documents form part of a suite of Manuals that had to be approved by the airport certifying body, ASSI, before the Aerodrome Licence could be issued. Both of the environmental documents were approved by ASSI during the first desktop audit in November 2015. Subsequent ASSI audits have not found any defects in environmental and wildlife hazard management at the airport. The SOPs contained in the EMS cover a wide range of environmental issues under the following headings:

- Storage of hazardous materials;
- Pest and predator control and monitoring;
- Waste management;

- Water use, management and monitoring;
- The management, maintenance and monitoring of rehabilitation areas;
- Environmental monitoring (air quality, noise, Wirebirds, energy) and reporting;
- Traffic management on and around the airfield.

In addition, the WHMP has a SOP on bird monitoring, recording and reporting.

### **4.3 Compliance Monitoring and Auditing**

Both the EMS and WHMP require a comprehensive system of compliance monitoring and auditing to be in place at the airport. The system comprises:

- Daily checks by Security, Air Traffic Control (ATC), EO and RFFS members;
- Weekly and monthly inspections by the EO and RFFS members; and
- Annual environmental audits by the Airport's Environmental Consultant.

Six-monthly internal self-audits are also conducted by SHAL staff, overseen by the Compliance Manager. All incidents/observations are recorded on an Incident Control Log and Wildlife Observation Log and are reported in the monthly environmental report.

#### **4.3.1 Site inspections**

The EO and his team conduct daily, weekly and monthly site inspections as per the programme set out in the EMS. The areas inspected on a regular basis include:

- The airfield, runway and taxiways;
- Waste management and bird control at the Horse Point Landfill Site (HPLS) (netting integrity and presence of pigeons and mynah birds);
- Vehicle workshop;
- Temporary waste storage compounds;
- Stormwater drains, sumps and oily water separators;
- Pumps;
- Oil spill kits;
- Refuelling activities;
- Hazardous chemical store;
- Café and eating areas;
- Fire Training Rig;
- Navigational aids.

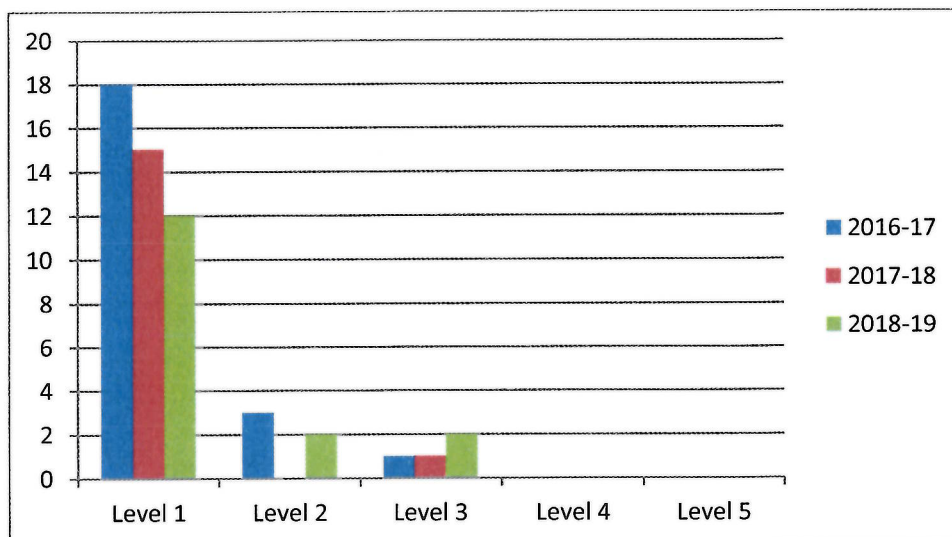
All incidents are rated in terms of severity according the scale set out in Table 2.



**Table 2: Incident rating scale**

Loss type	1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic
Harm to people (safety & health)	First Aid case;	Medical treatment; Exposure to minor health risk	Lost time injury; Reversible, moderate impact on health	Single fatality or loss of quality of life; Irreversible impact on health	Multiple fatalities; Impact on health ultimately fatal
Environmental impact	Possible risk to the environment	Reversible damage to the ecosystem	Moderate environmental harm or degradation of the ecosystem	Major environmental harm; Legal non-compliance	Irreversible, significant environmental harm; Loss of species; Ecological disaster
Impact on reputation	Slight impact; public awareness but no public concern	Limited impact; Local public concern	Considerable impact; Regional public concern	National impact; National public concern and outrage	International impact; Major public outrage

A total of 16 incidents was logged during the reporting period, which is the same as the previous year. The majority (75%) were rated as having no or insignificant risk to the environment (Level 1) (Figure 4). Two minor incidents, and two moderate incidents were recorded. The minor and moderate incidents were all related to wildlife and birdstrike risks, particularly flocks of fairy terns and pigeons at the end of runway 02 (northern end) in August 2018. In addition, the presence of a dead cat (in July 2018) and wirebird (February 2019) adjacent to the runway indicates that these were killed by aircraft on the runway during taxiing, landing or take-off. These observations were reported to the AAM and the Operations Manager.



**Figure 4: Incident ratings**

Most of the incidents occurred on the airfield and runway (7), while 6 were reported from the offices and public areas of the Terminal Building. One incident was associated with each of the Combined Building, the ramp/apron area and Horse Point Landfill (holes in the bird-proof netting) (Figure 5). It

should be noted that the Airport Fuel Facility (AFF) is managed by the fuel management contractor (Penspen) and is not the environmental responsibility of the airport.

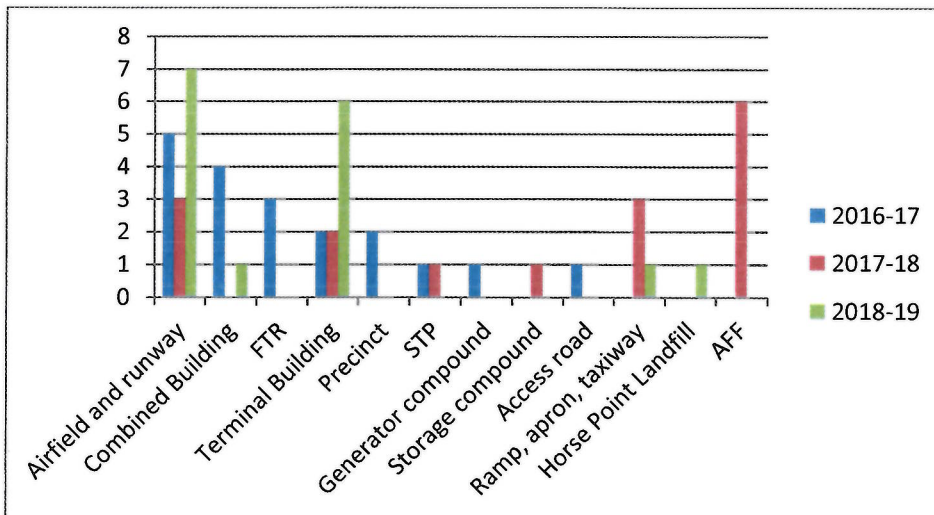


Figure 5: Number of incidents by area

Of the 16 incidents during the year, six concerned wildlife, six were health and safety issues, three were related to pests and predators (rabbits, cats and mice) and there was one environmental issue (the oily water separator filter was blocked). The health and safety findings were mostly associated with food hygiene in the cafes, offices and terminal building. Efflorescence on the walls of the staff break room was also noted as a health issue (Figure 6).

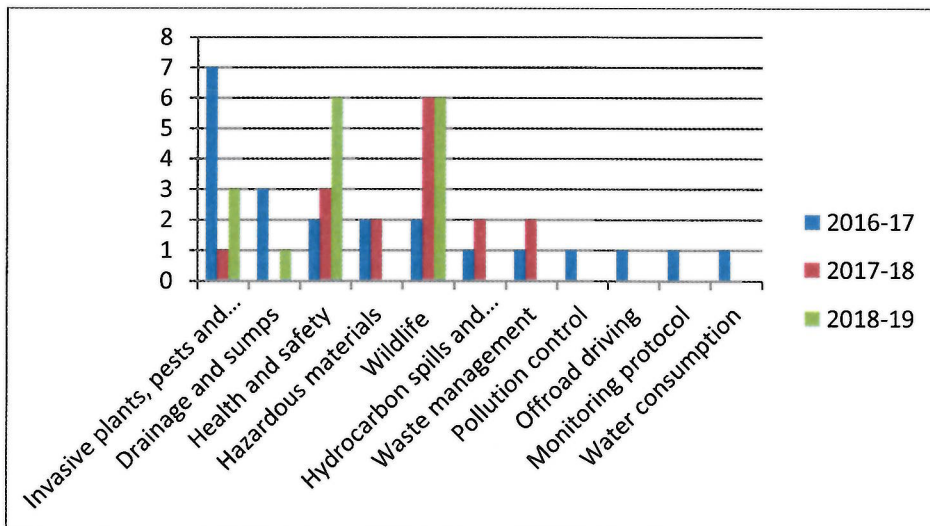
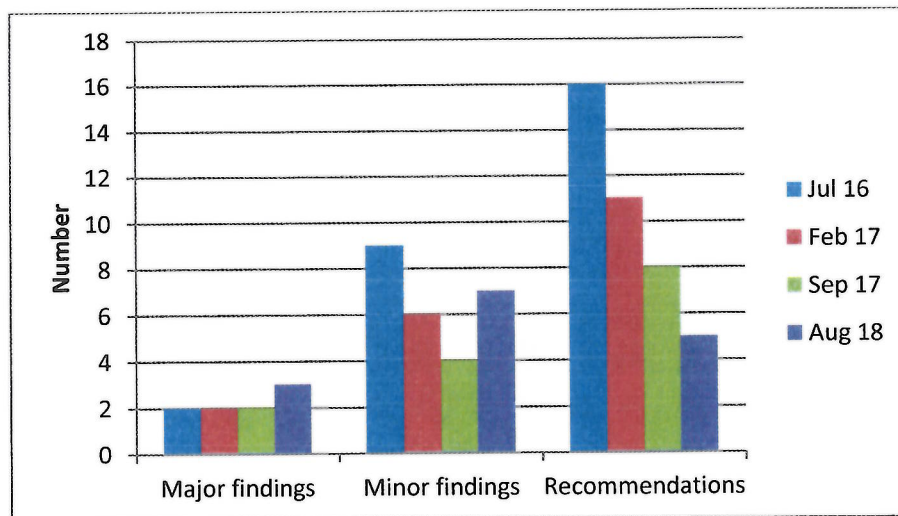


Figure 6: Incidents by type

#### 4.3.2 Annual audits

The EMS specifies that an environmental audit of airport operations should take place on an annual basis. The annual audit was carried out by the Airport's Environmental Consultant in August 2018. It can be seen from Figure 7 below that there was a slight increase in the number of major and minor findings over the previous year, but the number of recommended actions has decreased.





**Figure 7: Audit findings**

An important part of the auditing process is to make sure that the corrective actions identified to remedy the findings are actually implemented successfully. Table 3 below shows the status of the corrective actions following the last three audits.

**Table 3: Status of close-out of audit findings**

Audit date	No of major findings	Status as at next audit			No of minor findings	Status as at next audit		
		Closed out	In progress	Not adequately addressed		Closed out	In progress	Not adequately addressed
Feb 17	2	1	0	1	6	5	1	0
Sept 17	2	1	0	1	4	3	1	0
Aug 18	3	2	0	1	7	3	1	3

The one major issue identified in all the audits to date relates to the quality of the effluent being discharged from the sewage treatment plant (STP). This has been an ongoing issue and is being closely monitored. The problem appears to be caused by the fact that the STP was designed for a certain through flow from the predicted number of people passing through the airport on a weekly basis with commercial flights in operation. Even though commercial flights have commenced, the number of passengers is lower than that originally envisaged, due to the smaller plane being used by Airlink. Thus the through flow is less than the design specification for the plant to function at optimal levels. See section 7.2.2 for more information on this matter.

The second major finding during the August 2018 audit related to the presence of the invasive Namibian Ice Plant (*Galenia* spp.) which was inadvertently introduced to the Island via the importation of washed river sand for airport construction (see s. 7.2.7).

The third major finding related to repeated poor hygiene in the café kitchens and food preparation areas. It is important to maintain good hygiene standards for public health reasons, as well as to ensure that waste food items and dirty kitchen equipment does not attract food pests such as cockroaches, ants, weevils and so on.

Of the seven minor findings made during the audit, three have been successfully resolved and the preparation of the spill response plan for the airport is still in progress. However, three minor findings had not been closed out by the following audit in July 2019: there were no condom dispensers in either the gents or ladies washrooms at the airport; the precinct beds had become very overgrown and needed some maintenance; and a number of woody plants had started to become established in the Dry Gut fill. These outstanding actions were brought to the attention of airport management during the July 2019 audit.

Of the five recommendations made in the August 2018 audit, four have been implemented, and one is no longer relevant.

#### **4.4 Meetings and Reporting**

The EO attends the monthly airport operations meeting to raise any environmental issues arising and to ensure that environmental management actions are implemented where necessary. In addition, the EO prepares a monthly environmental report according to the format set out in the EMS. The report provides the latest information on environmental monitoring (see section 7 of this AER for a summary of all monitoring data), an inspection report, a list of any incidents or complaints, corrective actions and follow up, any amendments to the risk register, any stakeholder engagement activities and any other environmental management issues of importance.

In addition to the monthly reports, the Airport's Environmental Consultant produces an audit report after each audit and the AER, (this document).



## **5 EMPLOYMENT AND STAKEHOLDER ENGAGEMENT**

### **5.1 Employment and Employee Development**

As at 30<sup>th</sup> June 2019, the airport had 28 full-time employees, of which two Air Traffic Control (ATC) officers and one Meteorological Forecaster have been seconded to the airport. There are 39 part-time agency staff, with 23 being present at the airport on flight days. Eighty-five percent of the permanent staff are Saints, which is extremely encouraging and reflects a high degree of commitment to skills development in the Saint community.

In terms of sub-contractors, Solomons has the contract to provide staff for passenger check-in services, security, ramp handling and cargo processing at the Airport. In addition to Solomons, there are six concessionaires at the airport: Rose and Crown provide catering services in the airside café and business lounge, as well as running the duty-free shops (departures and arrivals), while Island Images provides the catering in the landside café in the Terminal Building. The Bank of St Helena, Tourism Office, Airlink and Siya Baggage Wrapping Services rent space in the arrivals area of the Terminal Building. Benji's Cleaners provide cleaning services.

There is a comprehensive programme of environmental training in place; all new permanent staff, concessionaires and sub-contractors are required to undertake the basic Environmental Induction and HIV Awareness training. Over the course of the year the EO conducted Environmental Induction training for 25 individuals comprising five from SHAL, 18 from Solomons and 2 from Penspen.

### **5.2 Complaints**

No complaints were received from the public during the year under review.

### **5.3 Open Days and Stakeholder Engagement**

In June 2019, the airport hosted children aged 14-16, taking part in the 'Believe and Achieve St Helena' campaign. The aim of the campaign was to expose children to potential career paths available on St Helena. The children visited the security staff, the air traffic control tower, the flight simulator, the Met Office, the RFFS staff and the fire training rig (Plates 5 and 6).

During the year, Airport management reached an agreement with St Helena Tourism and the St Helena National Trust to re-instate the King and Queen Rocks Postbox walk, with access across the security zone of the airfield. Those wishing to do this walk must contact an accredited tour operator, who in turn will undertake the necessary security clearance procedures and arrange a suitable date and time with Airport security personnel.



Plate 5: Some of the 'Believe and Achieve' students posing with one of the fire trucks (Photo: SHAL)



Plate 6: Two students participating in a fire drill (Photo: SHAL)

## **6 ENVIRONMENTAL MANAGEMENT ACTIVITIES**

This chapter summarises some of the environmental work undertaken during the reporting period.

### **6.1 Studies Commissioned**

No environmental studies were commissioned during the year under review.

### **6.2 Landscape and Ecological Mitigation Plan**

The St Helena Landscape and Ecological Mitigation Plan (LEMP) is currently working towards two main objectives: to rehabilitate land temporarily disturbed by airport construction, and to create compensatory habitats to offset land permanently transformed by the airport development.

Here we report on the car park areas, road verges and other bare areas in front of the buildings (airport precinct), which have been planted by LEMP but are maintained jointly by LEMP staff and airport personnel. We also report on endemic and invasive species on the airfield.

#### *Airport precinct*

In May 2018, twelve scrubwoods were planted in the gravel in front of the Terminal Building to improve the aesthetics of this area, however they were not protected from rabbits and in November 2018, it was reported that all the plants had been destroyed by rabbits (Plates 7 and 8).





**Plate 7: One of the scrubwoods planted in the gravel in front of the Terminal Building in August, 2018 (Photo: B Walmsley)**



**Plate 8: A scrubwood plant following rabbit predation in November 2018 (Photo: SHAL)**

The precinct beds near the car parks were flourishing in August 2018 and as planned, it was decided to start removing the rabbit-proof fences as the plants were deemed to be mature enough to withstand light rabbit grazing (Plates 9 and 10). Sadly, with the shortage of food due to the drought, the rabbits have inflicted severe damage on many of the plants in the precinct beds as shown in Plates 11 and 12. Unfortunately, no monitoring of the plants growing in the precinct beds was undertaken during the reporting period and therefore the number of plants lost due to drought and predation is not known.



**Plate 9: Precinct garden with rabbit fence removed showing healthy, mature scrubwoods and St Helena ebonies in August 2018 (Photo: B Walmsley)**



**Plate 10: St Helena ebonies in flower, August 2018 (Photo: B Walmsley)**





**Plate 11: Extensive rabbit damage to scrubwoods**  
(Photo: B Walmsley)



**Plate 12: The protective cage around this tea plant had blown away and the plant has been eaten by rabbits** (Photo: B Walmsley)

In addition, the lack of a clear definition of responsibilities for maintaining the beds resulted in species such as hair grass and thatching grass smothering some other less aggressive species such as the ebonies and scrubwoods (Plate 13). Furthermore, the shortage of water was having a visible effect on the St Helena ebonies (Plate 14).



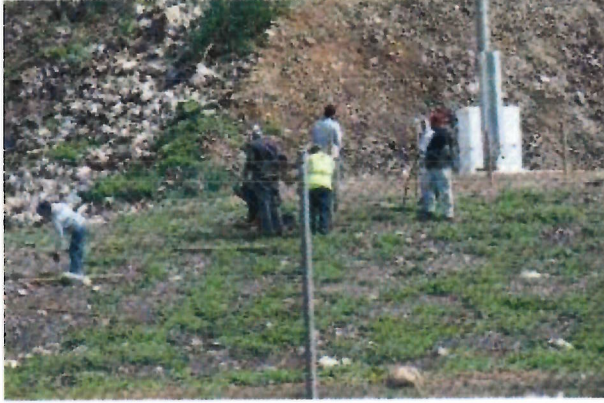
**Plate 13: Hair grass smothering a young, self-sown scrubwood** (Photo: B Walmsley)



**Plate 14: Wilting ebonies due to water stress during the drought** (Photo: B Walmsley)

In August 2018, the LEMP team started preparing the area around the STP for planting (Plate 15). By the end of the reporting period, 1202 endemic plants had been planted (Plate 16), comprising: 80 Boxwoods, 115 St Helena Ebony plants, 27 St Helena Goosefoot plants, 845 Scrubwoods, 14 Teaplants and 121 Tufted Sedge.





**Plate 15: The LEMP team installing rabbit-proof fencing and irrigation pipes in the area near the STP in August 2018** (Photo: B Walmsley)



**Plate 16: One of the LEMP team planting a St Helena Ebony seedling** (Photo: LEMP)

#### *Airfield*

During the August 2018 audit, several self-sown salad plants (*Hypertelis acida*) were observed to be growing on the Dry Gut fill next to the track leading down into the open channel (Plate 17), but it is feared that these were later eaten by rabbits. Also during August, between 5 and 8 self-sown scrubwoods (*Commidendron rugosum*) were observed growing near some mature plants on King and Queen Rocks (Plate 18).



**Plate 17: Self-sown salad plants on the Dry Gut fill** (Photo: B Walmsley)





**Plate 18: Scrubwoods growing near King and Queen Rocks with some self-sown plants in the surrounding area (Photo: RFFS)**

It was also noted during the August 2018 audit that there are some woody species e.g. wild tobacco (*Nicotiana glauca*) and wild mango (*Schinus terebinthifolius*) growing in the Dry Gut fill which is not desirable as their root systems could cause preferential flow of water and subsequent piping, which could affect the engineering integrity of the structure (Plates 19 and 20).



**Plate 19: Wild tobacco growing in the Dry Gut fill (Photo: B Walmsley)**



**Plate 20: A wild mango plant growing in the Dry Gut fill (Photo: B Walmsley)**



## 7 ENVIRONMENTAL MONITORING

### 7.1 Monitoring Programme

The responsibility for all monitoring lies with the Environmental Officer (EO). The following environmental aspects were monitored on a regular basis during the reporting period (Table 4).

**Table 4: Monitoring frequency**

Environmental aspect	Monitoring frequency					Comment
	Daily	Weekly	Monthly	Quarterly	Ad hoc	
Air quality -TSP			X			
Potable water			(X)			Supposed to be monthly but there was no Laboratory Technician available from November 2018 to June 2019.
FTR and OWS effluent					X	When water is flowing but there was no Laboratory Technician available from November 2018 to June 2019.
STP effluent			(X)			Supposed to be monthly but there was no Laboratory Technician available from November 2018 to June 2019.
Noise					X	Following complaints
Waste		X				
Resource use			X			
Seabirds – bird strike risk	X		X			
Wildlife	X	X	X			
Pests and predators	X	X	X			
Biosecurity and Invasive vegetation			X		X	
Climate	X					

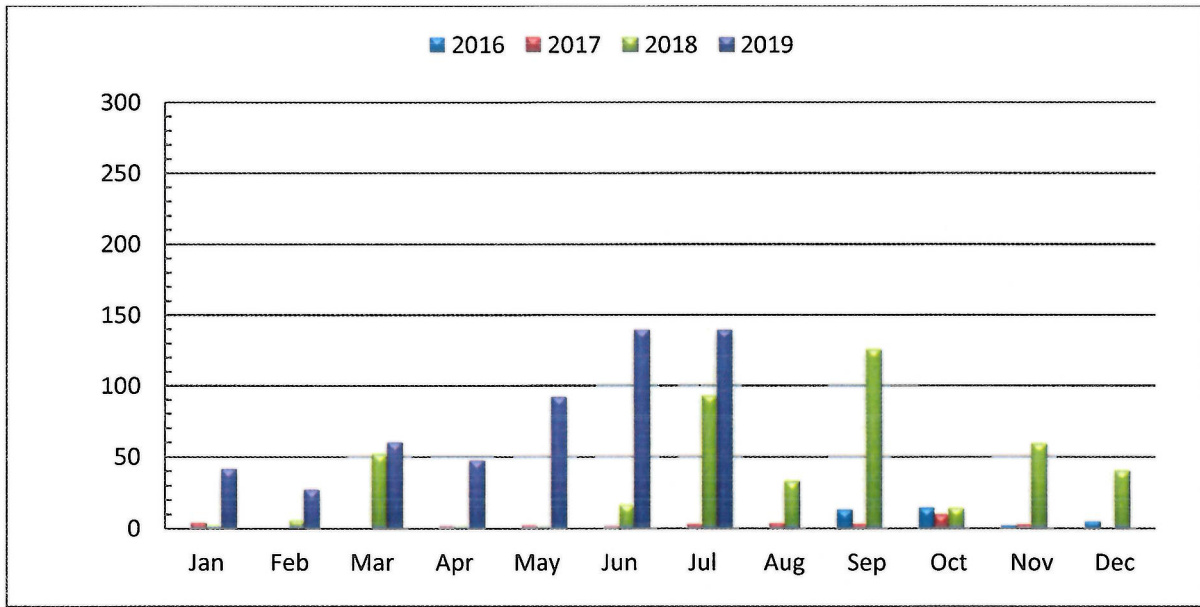
### 7.2 Monitoring Results

#### 7.2.1 Air quality

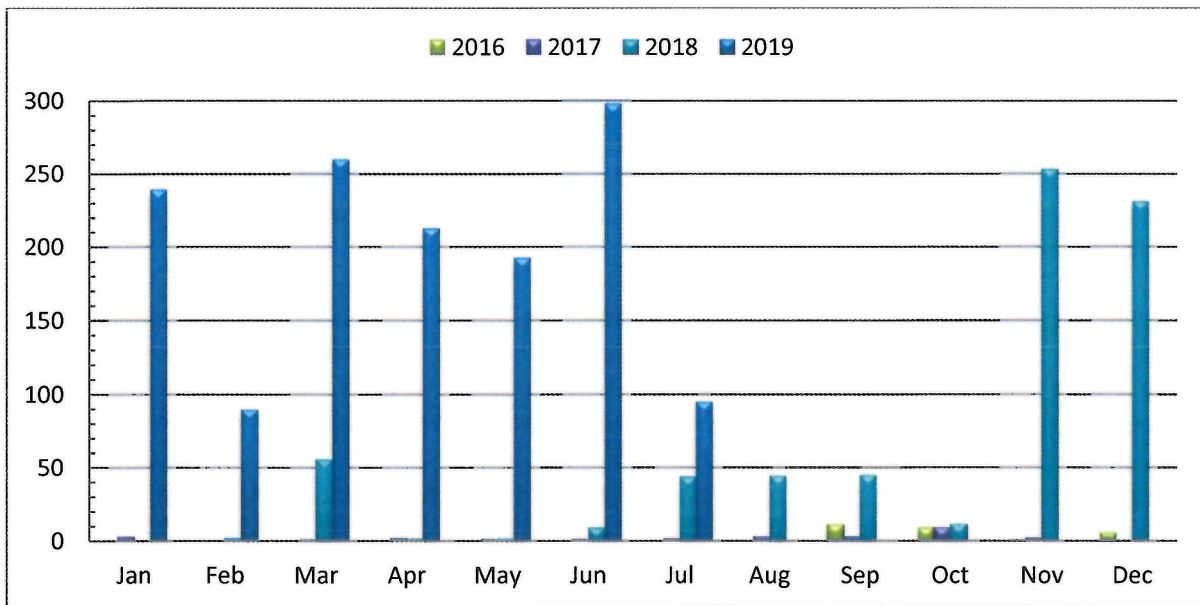
The Airport is monitoring total suspended particulates (TSP) (dust) at two locations downwind of the runway near the old localiser mound. These two sites were selected due to ease of access on existing tracks and they lie directly in the main area of dust deposition from the airfield.

The average dust-fall in Bucket 1 was orders of magnitude higher than the previous year at 64 mg/m<sup>2</sup>/d (compared to 8.75 mg/m<sup>2</sup>/day) and an even greater increase is evident at Bucket 2, where

an average of 160 mg/m<sup>2</sup>/d was recorded compared to last year's average of 8.03 mg/m<sup>2</sup>/d (see Figures 8 and 9). Dust bucket 2 is located about 150 m from the centreline of the runway and dust bucket 1 lies about 300 m away and at a slightly lower elevation. This explains the significant difference in the amount of dust recorded in bucket 2 (closest) compared to bucket 1 (further away).



**Figure 8: Monthly average dust measurements for bucket 1**



**Figure 9: Monthly average dust measurements for bucket 2**

In spite of the significant increases, these totals are well below the limit prescribed in the EMS of 600 mg/m<sup>2</sup>/d. The increases can be ascribed to the exceptionally hot, dry, windy conditions and below-average rainfall over the past year (see also s. 7.2.8), with peak dust fall occurring in winter with the stronger wind conditions (Plate 21). There was also an increase in dust following the removal of the



saltbush plants from the airfield in January (see s. 7.2.3 and 7.2.7 below). This underlines the importance of promoting the growth of vegetation on the airfield to reduce the amount of dust, but not plants that attract birds.

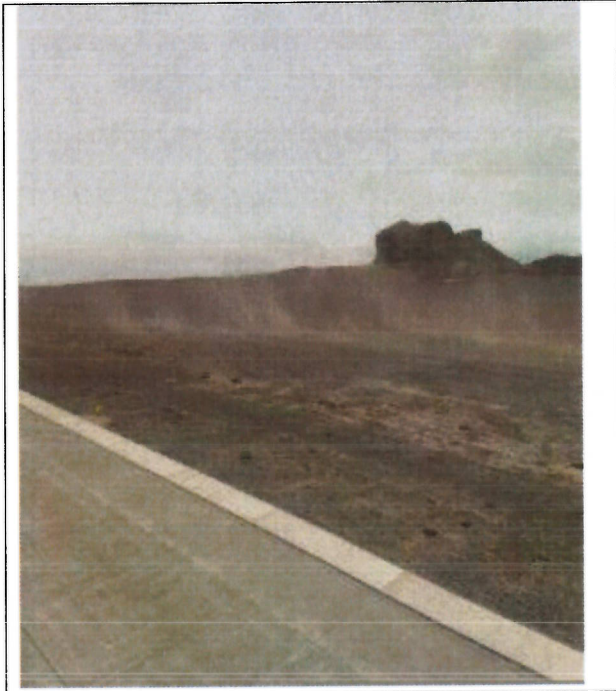


Plate 21: Dust blowing alongside runway 20 on 30/10/18 (Photo: SHAL)

### 7.2.2 Water quality

The Airport obtains water from two locations for different purposes: Connect supplies treated water from the reservoir at Hutt's Gate via a new pipe to the airport; and groundwater from Borehole 5 is used for irrigation of the precinct gardens, vehicle washing and regular testing of the firefighting equipment and pumps. The latter continues to be supplied by SHG because Borehole 5 has yet to be formally handed over to Connect.

The water supplied by Connect from Hutt's Gate Water Treatment Works is treated with chlorine prior to distribution. IATA has strict requirements in place for the quality of water supplied to aircraft and specifies the list of parameters that should be monitored on a regular basis. In order to ensure public health standards, the Department of Public Health also monitors the quality of water at the taps in the public cafes and restaurants in the Terminal Building. Unfortunately, it has not been possible to monitor water quality at the airport for most of the year in question due to the lack of a certified technician at the Hospital Laboratory after the incumbent left the Island in November 2018; his replacement only arrived in June 2019. This was further compounded by the unavailability of Public Health officials to take samples every month for a variety of reasons. In addition, it took several months for additional water quality testing equipment to arrive on the Island to allow analysis of all the IATA parameters. The equipment finally arrived in November 2018, just as the water quality technician was leaving. This means that sampling and analysis only took place in three months (July 2018, November 2018 and June 2019).

In order to ensure ongoing public health standards on aircraft, the RFFS paramedic purchased chlorine test strips and some liquid chlorine and has been adjusting the chlorine levels in the water being supplied to the aircraft since July 2018.

Groundwater from Borehole 5 is supposed to be monitored by Connect on a quarterly basis, but due to the reasons cited above, no analyses have been conducted on this source during the year in question. However, a five-year history of analysis shows that the water from this borehole is fit for purpose.

In addition to monitoring the quality of water provided to the Airport, samples are also taken to determine whether the effluent discharged from various sources at the Airport complies with the required standards. Water and effluent are discharged from: the Fire Training Rig (FTR) after passing through an oily water separator and a stilling basin (to let the foam subside); the apron area and car parks via oily water separators; and the Sewage Treatment Plant (STP) after partial treatment and chlorination. Water flow in the streams downstream of all of these sources was either insufficient to take a sample, or no samples were collected due to the lack of analytical capability at the Hospital Laboratory.

The quality of the treated effluent discharged from the STP has been a problem in the past due to the lower than expected number of passengers passing through the airport, which means that the STP is not operating at its optimum capacity. The settings on the plant have been adjusted from time to time to improve its efficiency, but it is not possible to evaluate the performance of this plant without any laboratory results.

### **7.2.3 Waste management**

There is a comprehensive system of waste management in place at the Airport which must comply with the Waste Management Plan contained in the EMS. All wastes are separated according to whether they are hazardous or not and by type, where relevant. The wastes are collected in colour-coded wheelie bins in special temporary waste storage areas, with one outside the Terminal Building and another by the Security Gate for all airside wastes. Hazardous wastes are taken to the hazardous waste cell at Horse Point Landfill Site (HPLS) by the EO, while non-hazardous wastes are collected by EMD on a weekly basis for disposal in the netted domestic cell at HPLS.

The amount of hazardous waste produced was significantly higher this year than the previous year at 1,096 kg compared to the 64 kg (or kg equivalents) of waste generated in the last reporting period. This was largely due to workshop wastes, such as oil, oil filters and oily rags, from servicing the airport ground equipment (September) and the back-up generators in February (Figure 10). Other small quantities of hazardous wastes produced at the airport include fluorescent light fittings, batteries and galley wastes from charter aircraft.



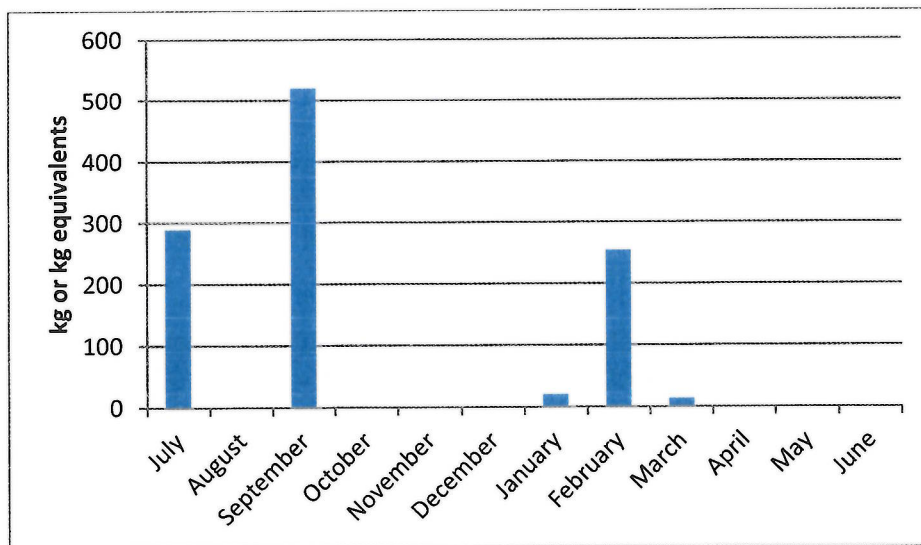


Figure 10: Hazardous waste production per month, 2018-19

As expected, the amount of non-hazardous waste has increased this year due to the introduction of the additional weekly flight for 5 months over the summer months (Figure 11). A total of 5,345 kg (or kg equivalents) of non-hazardous waste was produced (compared to 3,602 kg last year). Most of this waste is general waste from the Combined and Terminal Buildings, with minor amounts of paper/cardboard packaging, scrap metal, tyres, etc. The airport generates on average 445 kg of non-hazardous waste per month.

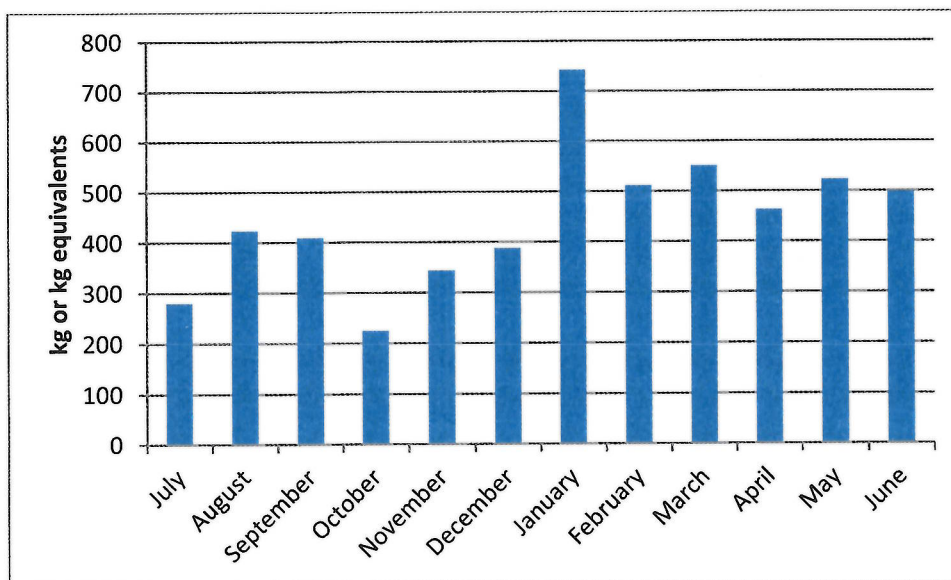


Figure 11: Non-hazardous waste produced per month, 2018-19

In addition, the self-sown common saltbush plants (*Atriplex semibaccata*) growing all over the airfield had to be pulled out and disposed of because the berries were attracting pigeons to the airfield which is not desirable from a bird strike risk point of view. A total of 26,970 kg of this plant was removed in January and March 2019 (Plate 22).



Plate 22: Removal of more than 26,970 kg of saltbush from the airfield during January for disposal at Horse Point Landfill site

#### 7.2.4 Resource Use

During the reporting period, the Airport was supplied with 424,000 litres of treated water by Connect. The monthly consumption figures are shown in Figure 12, but unfortunately the water meter was broken from December to April 2019 and therefore no readings were available for these months. The excess consumption recorded in June 2019 can be ascribed to breaks in the pipeline outside the airport.

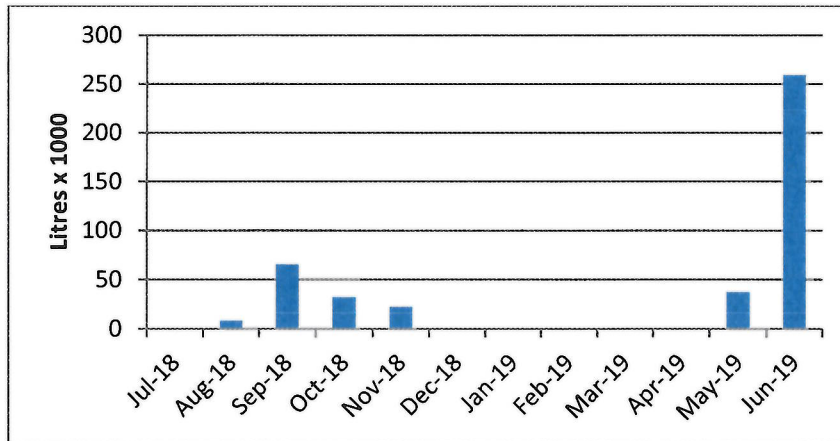


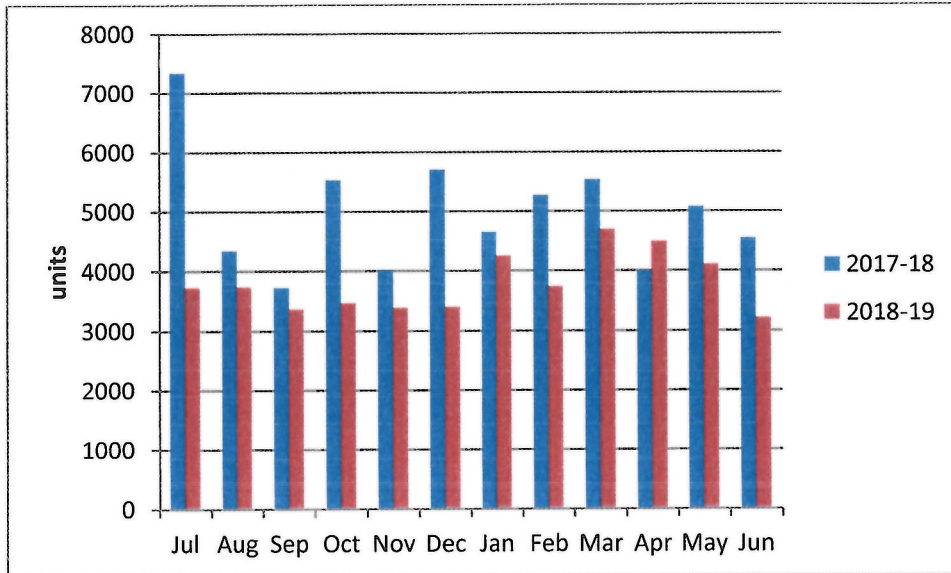
Figure 12: Monthly potable water consumption at the airport

A small amount of water from Borehole 5 continues to be used to test the firefighting equipment and pumps on a daily basis and during fire training exercises. It is also used to irrigate the plants in the precinct gardens, but recent use has been restricted due to the drought.

The total energy use during the year was 45,430 KWh compared to 59,680 KWh in 2017-18, which is a 24% reduction (Figure 13). This has been achieved by only checking and turning on the runway lights on the days of flight operations, reconfiguring the lighting systems in both the Terminal and Combined Buildings to maximise the use of daylight, and thirdly, by turning off the air conditioners in



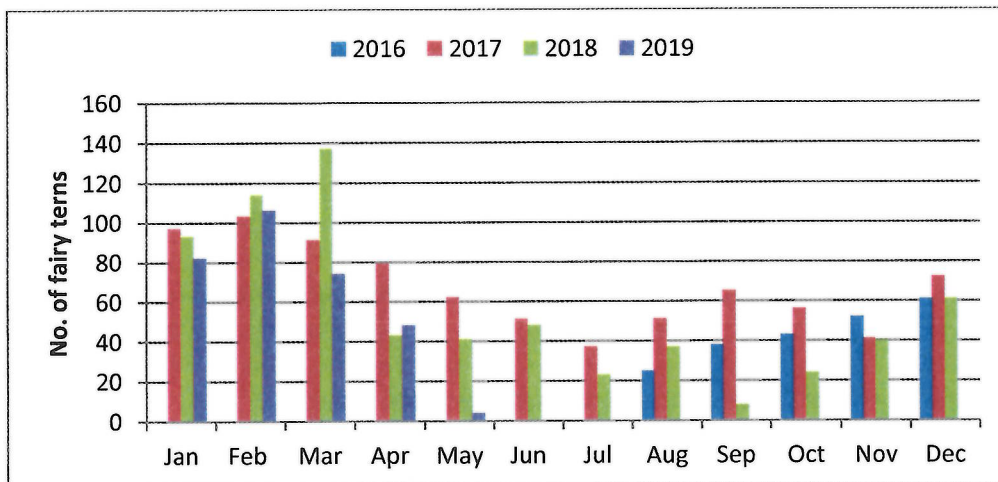
the Terminal Building on non-flight days. This reduction in power use has also occurred in spite of the additional flights over the summer holiday period.



**Figure 13: Monthly energy consumption**

**7.2.5 Birdstrike risk monitoring**

The birdlife in the northern airspace, which is largely over the sea, is dominated by fairy terns, occurring mostly in pairs or singly. Fairy terns nest extensively in Lower Fisher’s Valley and the sightings in the northern airspace indicate the movement of these birds between their cliffside nests to their feeding grounds out at sea. Although these birds breed all year on St Helena, there appears to be a peak in activity between January and March (Figure 14). The number of fairy terns observed in the 2018-19 period appears to be lower than in previous years.<sup>1</sup>



**Figure 14: Fairy tern monitoring in northern runway airspace**

<sup>1</sup> No observations were made in June 2019 due to staff shortages

Mynah birds and feral pigeons are seen occasionally at the northern end of the runway, but usually less than 20 sightings per month.

The southern end of the runway paints a very different picture, with red billed tropic birds, fairy terns, mynahs and masked boobies being frequently seen in the airspace (Figures 15, 16 and 17). The red billed tropicbirds nest near the top of Great Stone Top and disperse from here out to sea which explains the high number of sightings of this species (40% of the total) (Figure 16). However, the proportion of these birds in relation to other species has gone down significantly since last year, when red-billed tropicbirds made up 64% of the birdlife observed in the southern airspace (Figure 15).

The number of masked boobies has increased significantly since last year and these birds now make up 26% of the observations in the southern approaches (Figures 15 and 17). The number of masked boobies seen in a month last year never exceeded 25, but this year, up to 62 birds were seen in a single month (February 2019) and more than 25 were seen in 4 other months (Figure 17). In August 2018, a flock of masked boobies was observed flying low over the runway 02 turnaround area. These are large birds and pose a moderate risk to aircraft and numbers need to be monitored carefully.

Fairy tern numbers have also increased this year in the southern airspace and more than 20 birds were observed in four months compared to only one month last year (Figure 17). Fairy terns make up 20% of the birdlife observed in the southern runway approach/departure zone (Figure 15).

Brown Boobies and pigeons are observed less frequently and in small numbers, while Mynah birds are observed in most months of the year. The number of these birds has also increased since last year and more than 10 individuals were observed in 3 months (Figures 15 and 17).

In spite of this increase in bird numbers, there have been no reports from pilots of any bird activity.

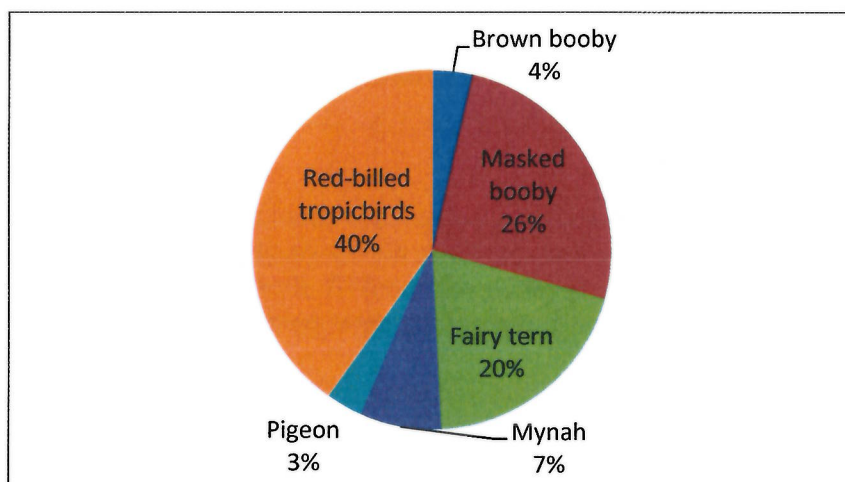
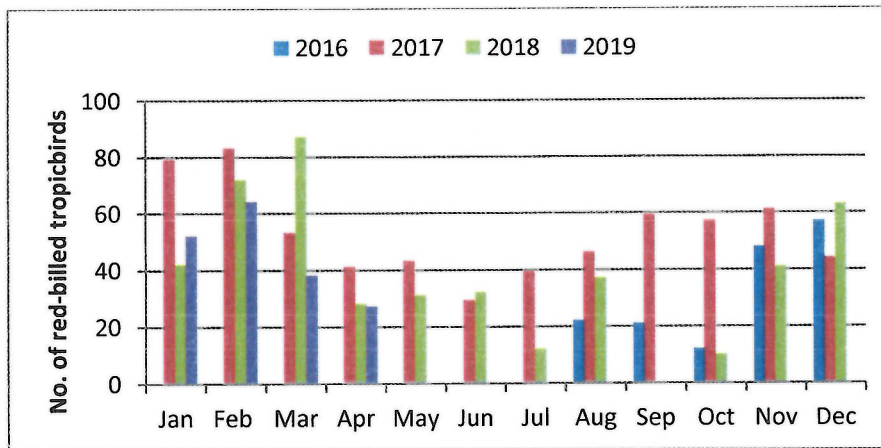
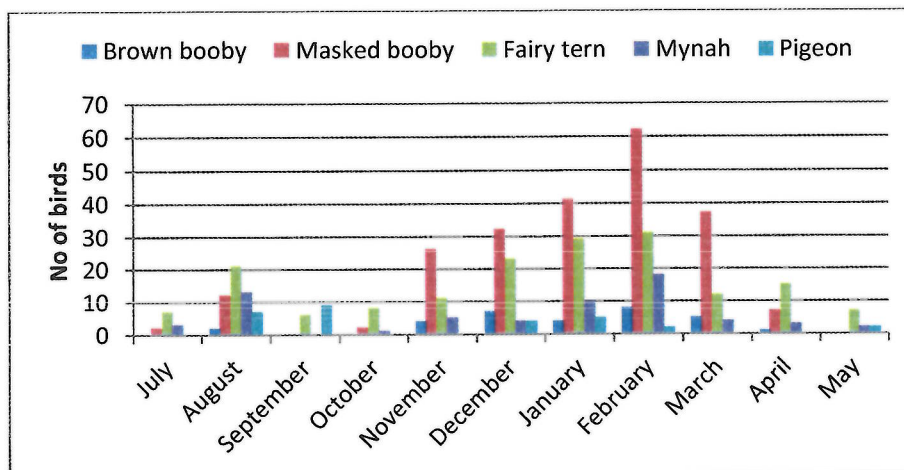


Figure 15: Composition of seabirds observed in the southern airspace in 2018-19





**Figure 16: Monitoring of Red-billed tropicbirds in the southern runway airspace**



**Figure 17: Birds (other than Red-billed tropicbirds) occurring in the southern airspace**

### 7.2.6 Wildlife monitoring

In addition to seabird monitoring in aircraft approach and take-off zones, it is important to control wildlife within the airfield area to prevent collisions during landing, take-off and taxiing. For this reason, the environmental team, security personnel and ATC officers keep daily logs of all species of potential risk to aircraft, such as fairy terns, pigeons, mynahs, partridges, rabbits, cats and dogs.

While the fairy terns and partridges are considered to be a low risk to aircraft due to their small size and flight habits, both pigeons and to a lesser extent, mynahs pose a higher risk to aircraft due to their flocking habits. Both these species associate themselves with human activities and scavenge on food scraps. It is for this reason that these species are closely monitored and waste management has to be exemplary to prevent them taking up residence at the airport.

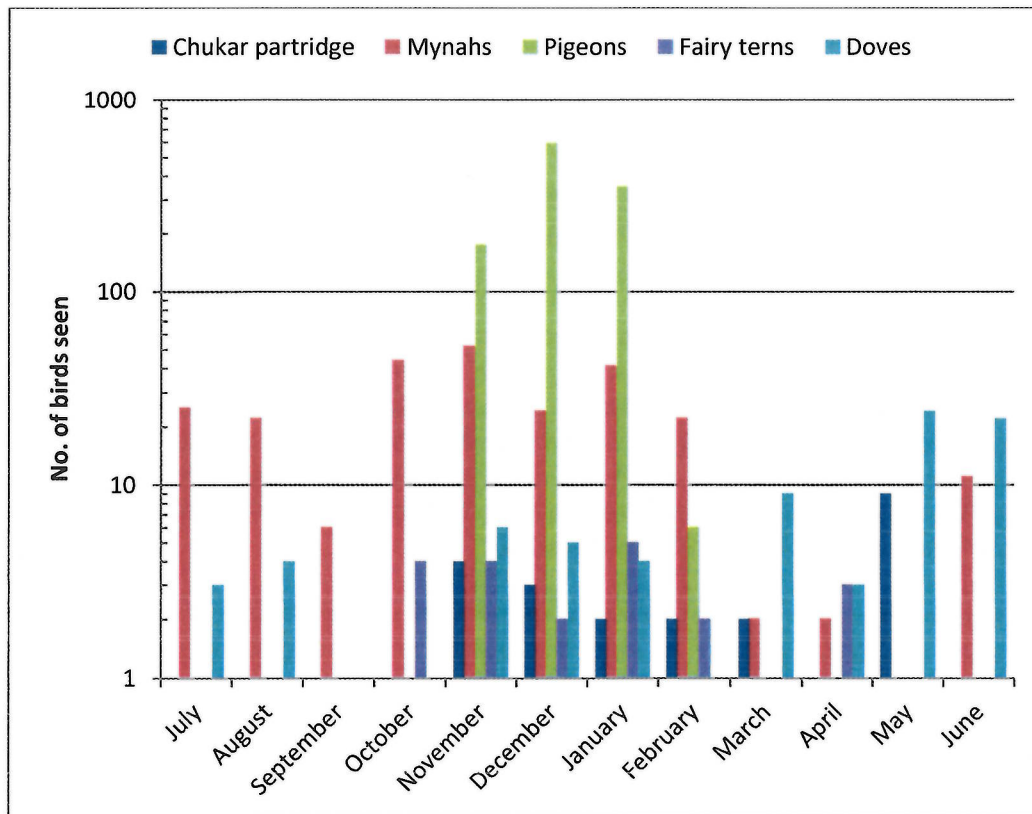


Figure 18: Birds (excluding the Wirebird) seen on the airfield, 2018-19 (note logarithmic vertical scale)

In addition to aircraft safety issues, mynah birds prey on Wirebird chicks and eggs, while rabbits pose a serious threat to plants, especially new plantings, which are additional reasons why these species need to be monitored and controlled.

The birds are monitored visually every day, while the presence of cats, rabbits and dogs is observed via closed circuit television cameras located around the airport buildings and on daily patrols by security personnel.

After four months in late winter/spring without any pigeon sightings, these birds arrived in large numbers in November and continued to be present near the DVOR, taxiway, oily water separator and Crash Gate 7 in large numbers throughout December and January. Traps were put out in November, but as these were unsuccessful, some culling was also carried out. However, it was only when the main food attractant – the berries of the common saltbush were removed, did the numbers reduce to a safe level (Figure 18). From an aircraft safety point of view, it is not desirable to have so many pigeons at the airport and proactive measures will be required in future years to ensure that this situation does not re-occur.

Mynah birds are also frequent visitors to the airfield, with more than 40 birds seen each month during the summer – possibly also attracted by the saltbush berries (Figure 18). These birds could pose a threat to aircraft as well as the nesting Wirebirds and need to be discouraged from the airfield.



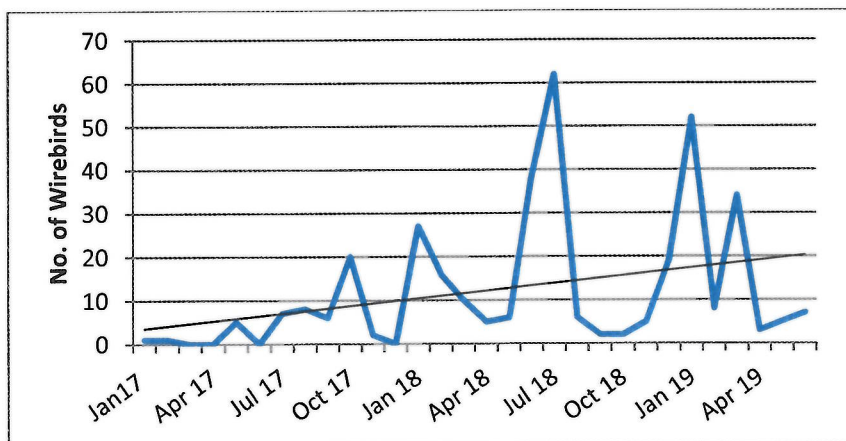
The third most commonly observed bird on the airfield is the Peaceful dove. This bird has not been seen previously at the airport and it is not clear what attracted it in quite large numbers in May and June 2019 (Figure 18). Although the bird is small in size, it does tend to fly in loose flocks and an increase in numbers is not desirable.

Fairy terns have been seen more regularly flying between 100-200 m above the runway, and all incidents were reported to the Accountable Manager and Operations Manager. A Notice to Airmen is in place.

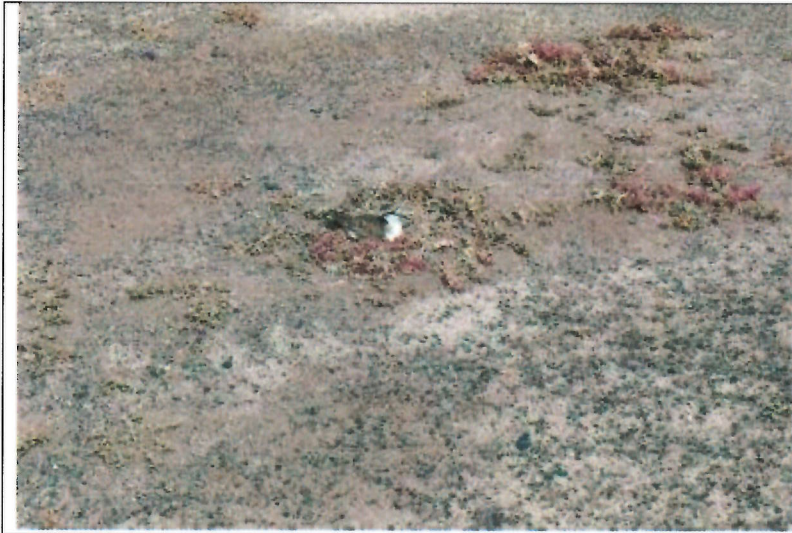
Chukar partridges are small birds which usually occur in pairs or small groups. Their flight is strong, fast and low over short distances and never out to sea or over the cliffs and therefore they do not pose a risk to aircraft on approach but because of their gregarious nature outside of the breeding season, they could pose a threat to aircraft on the runway. They feed on seeds, leaves and insects and favour the semi-arid area found in the Prosperous Bay Plain (PBP) area. After the first two birds were seen on the airfield in June 2019, more and more sightings have been made – mostly pairs of birds, but nine were observed in May 2019 (Figure 18).

The Wirebird does not pose a threat to aircraft at all due to its very small size, non-gregarious nature and flying habits. It is St Helena’s only endemic bird and the national bird of the Island. It is classified as Vulnerable on the Red List and therefore it is monitored all across the Island within its distribution range. It was previously listed as Critically Endangered but various conservation programmes on the Island including the control of rodents and cats, has resulted in an increase in the total population over the past 10 years.

One of the perceived threats was the construction of the airport in one of its main breeding areas on PBP. After completion of the airport, there were occasional sightings of Wirebirds within the airfield, but these birds are now being seen on a regular basis, and numbers are steadily increasing (Figure 19). In July 2018, 62 adults were observed over the month, usually in the early morning around shallow puddles. In August 2018, two nests were found just outside the airfield perimeter fence, in December 2018, a single nest was found inside the fenced area (Plate 23) and in January 2019, five nests were discovered, which clearly indicates that these resilient little birds are recolonising the area. With this increase in numbers the inevitable happened in February 2019 when the remains of one bird were found on the runway, clearly struck by an aircraft.



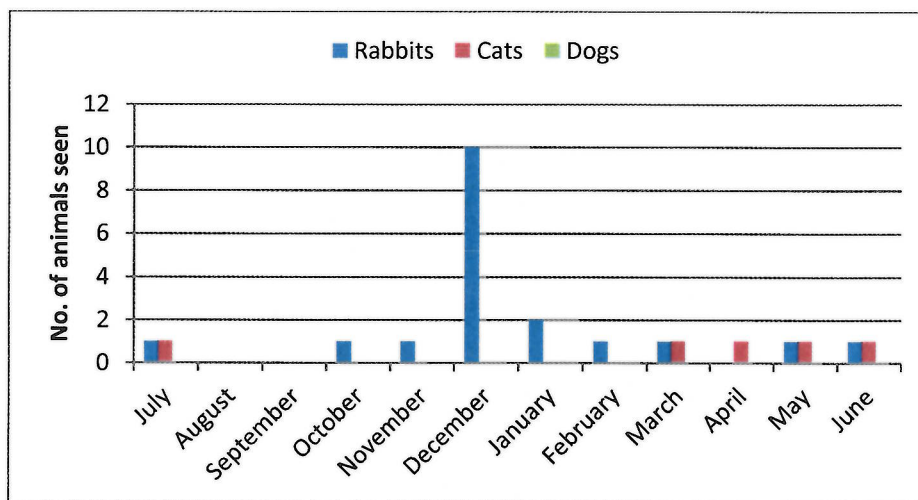
**Figure 19: Wirebird observations on the airfield (with trend line)**



**Plate 23: Wirebird nesting on side of runway 20 (Dec 2018) (Photo: RFFS)**

In spite of the increase in bird numbers on and around the airfield, there have been no reports from pilots.

Rabbits, cats and dogs could pose a threat to aircraft during landing and take-off on the runway. Rabbits also pose a threat to plant regeneration, especially endemic plants which occur within the airfield security fence, while cats are one of the main predators of ground-nesting Wirebird eggs and chicks. For these reasons, these animals are monitored on a monthly basis. A total of 19 rabbits, 5 cats and no dogs were observed during the reporting period (Figure 20). Rabbit traps were deployed without any success, but one cat was trapped in April and taken to ANRD (Plate 24).



**Figure 20: Animals observed on the airfield**





Plate 24: Feral cat caught inside the airport perimeter fence in April, 2019  
(Photo: SHAL)

### 7.2.7 Biosecurity

In this section, biosecurity is discussed in terms of invertebrate monitoring and invasive vegetation monitoring.

#### *Invertebrates*

Five invertebrate monitoring sites were set up in January 2017 to monitor for the presence of alien and invasive invertebrates outside key points around the airport: Stores Building, the passenger and cargo sections of the Terminal Building and near the workshop and stores within the Combined Building. Each site comprises an invertebrate refuge consisting of a standard hollow breeze block covered by a concrete slab; one of the compartments in the block holds a sticky board, the other compartment is loosely stuffed with newspaper. The monitoring sites are checked on a monthly basis by SHG's biosecurity team, when all sticky traps and newspaper are carefully collected for analysis. All species recorded are common on St Helena Island and have not been imported.

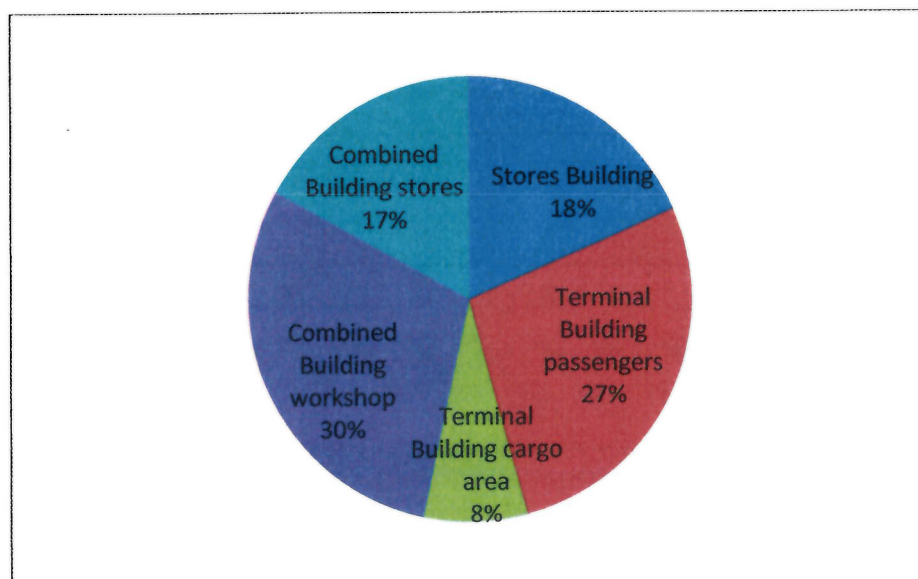
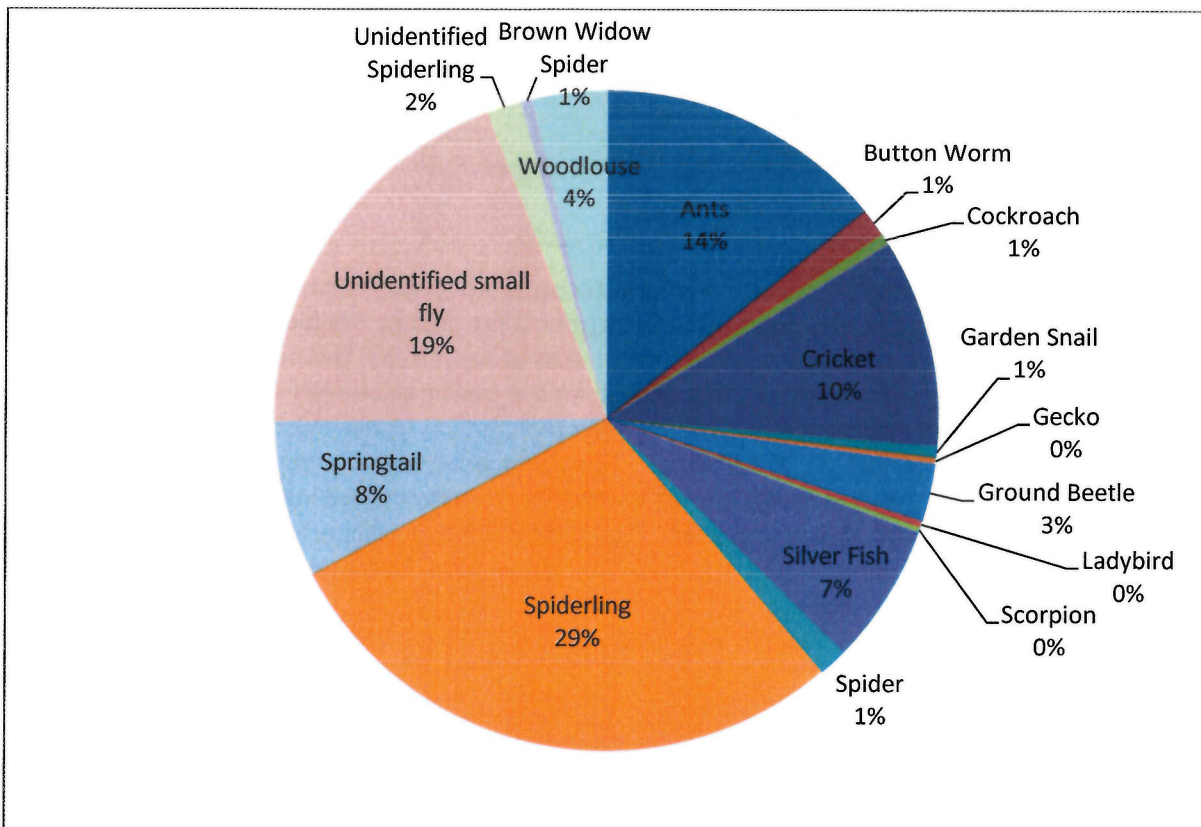


Figure 21: Biosecurity monitoring per airport area, July 2018 to June 2019

In 2017-18, 114 individuals were caught in these traps, but there has been more than a three-fold increase in the number of invertebrates caught in the current period (354 individuals). Most of these were found in the traps outside the Combined Building workshop (30%) and the passenger side of the Terminal Building (27%) (Figure 21). As none of these are introduced species, the increase is thought to be due to gradual restoration of ecosystem functioning following airport construction.

It was also noted that many invertebrates, especially ants, flies, cockroaches, spiderlings and crickets are most active during the summer months from November to March.

In the previous reporting period only 12 different species were caught in the traps, but this has risen to 17 this year. The new trapped species include ants, button worms, garden snails, a ladybird and one scorpion. The relative number of species caught this year varies considerably from last year, when the majority of the species caught were silverfish (50%), whereas this year, spiderlings dominate the species identified (29%). This year there were also a larger number of unidentified small flies (19%) and ants (14%) (Figure 22). There has also been a significant decrease in the number of silverfish caught.



**Figure 22: Composition of species caught, July 2018 to June 2019**

*Invasive vegetation*

During airport construction, Namibian river sand was imported to St Helena for a variety of construction uses. Representative samples of the river sand were subjected to germination trials to



determine whether there were any viable seeds in the sand. In spite of this, individual specimens of the Namibian Ice Plant (*Galenia* spp.) started to be found in 2016 in areas which had been temporarily disturbed by construction activities, e.g. at the PBP site compound, and at the airport (Plate 25). The LEMP team together with RFFS staff carried out a search within the fenced area of the airport in September 2018 and found 234 Namibian Ice Plants, which were removed and destroyed according to the protocol in the EMS. Only one plant has been seen since (in the precinct area in April 2019). This could be because of the drought, and staff remain vigilant because this plant has a rapid life cycle, produces masses of seeds and is highly invasive.



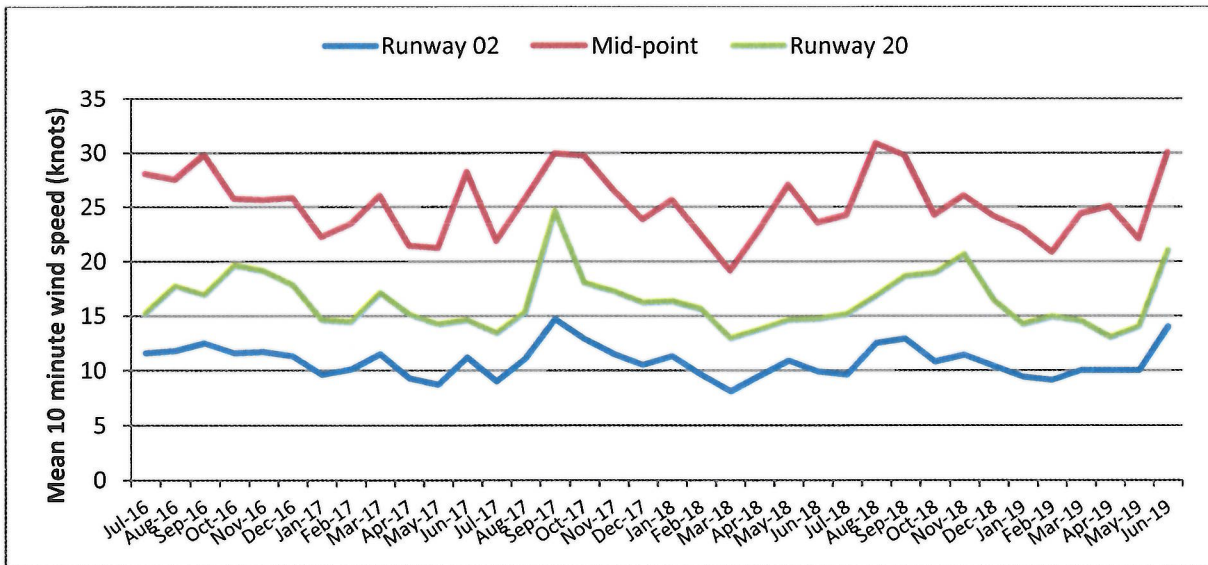
Plate 25: Namibian Ice Plant in flower (Photo: SHAL)

### 7.2.8 Weather

Weather data (wind, temperature, relative humidity, air pressure, precipitation, sunshine, cloud cover and visibility) are measured by the Airport Meteorological Office and by the Meteorological Station at Bottom Woods. Of particular interest to the airport is wind speed, rainfall and sunshine/cloud. Figure 23 shows the monthly mean 10-minute wind velocity for the period since records began. There is a clear pattern of lower wind speeds during the summer months and higher velocities in winter/spring. The long-term averages for the 02, Midpoint and 20 runway anemometers are: 10.8, 25.2 and 16.3 knots<sup>2</sup> respectively. The average monthly wind speeds for the reporting period are similar with 10.8, 25.3 and 16.5 knots for each monitoring point. The highest wind speeds are at the midpoint of the runway and lowest at the northern end (Runway 02). The prevailing wind direction was from the south-east to south-south-east sector.

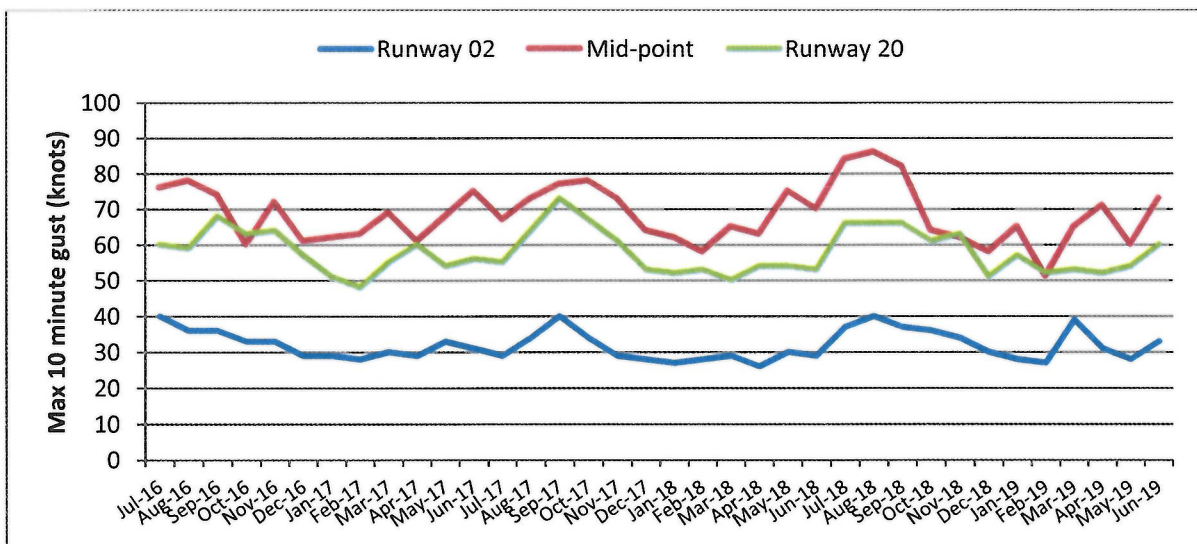
---

<sup>2</sup> 1 knot = 1.84 kph



**Figure 23: Mean 10-minute wind speed at monitoring points along runway**

The strongest sustained 10-minute gust ever recorded was 86 knots on 26<sup>th</sup> August 2018 and the second highest recorded gust of 84 knots was recorded the previous month (July 2018). The lowest 10-minute gust during the reporting period was 28 knots (January and May 2018) (Figure 24). As with the monthly average wind speeds, the strongest winds occur in winter.



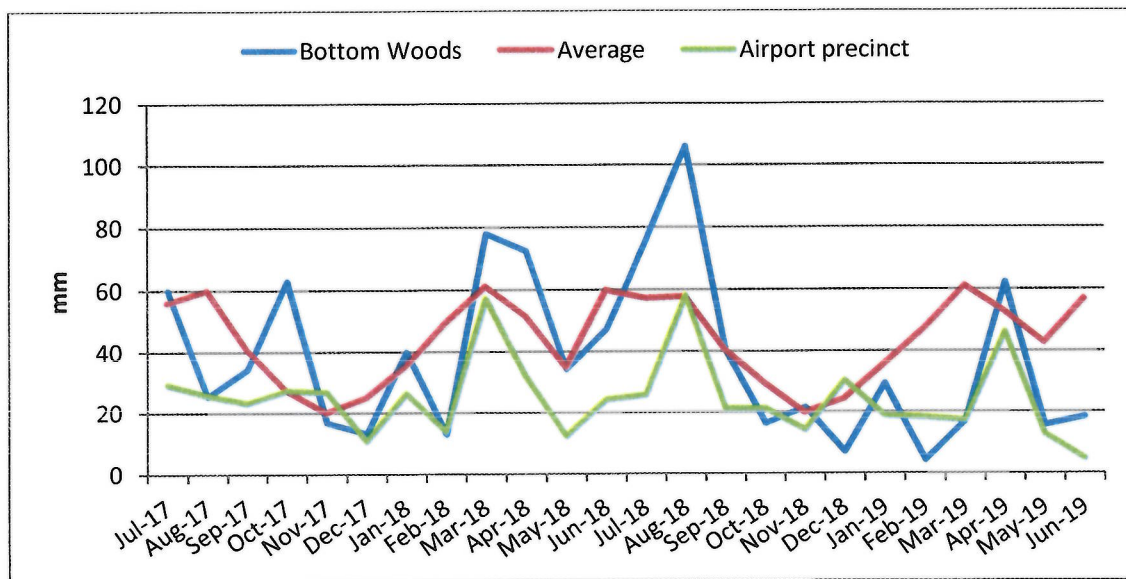
**Figure 24: Maximum 10-minute gusts at monitoring points along the runway**

Figure 25 presents the monthly rainfall totals measured at Bottom Woods Met Station (blue), the Bottom Woods long-term average (in red) and the rainfall recorded at the airport precinct (green). The total rainfall for the period July 2018 to June 2019 at Bottom Woods was 412.4 mm, which is 21% less than the long-term average of 522.7 mm at this station. Although four months during the reporting period experienced higher than average rainfall, the remaining months recorded far less than average, particularly since December 2018. As a result, an official drought has been declared on the Island and water restrictions were introduced in June 2019.



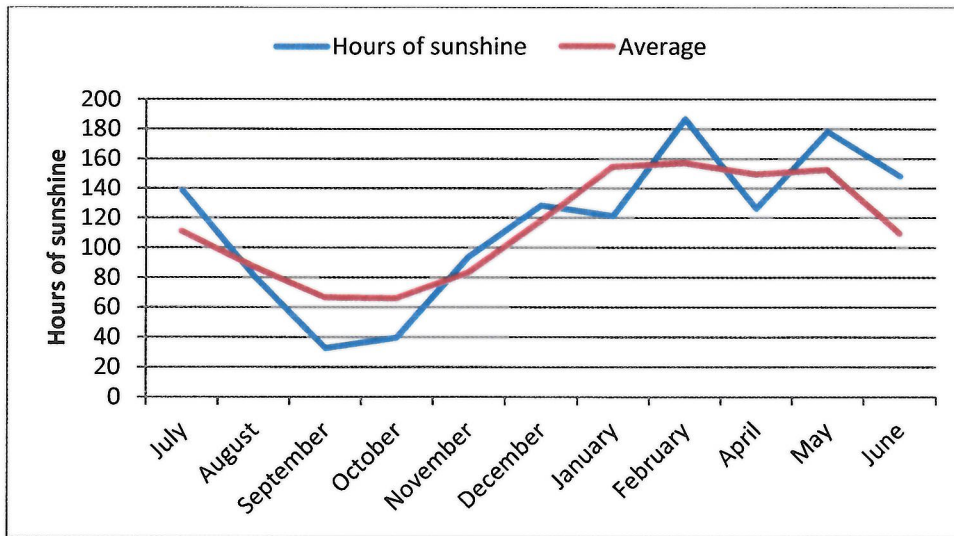
The highest-ever monthly total at Bottom Woods was recorded in August 2018 when 106 mm of rain fell during the month compared to the long-term average of 57.6 mm. On 31<sup>st</sup> July 2018, Bottom Woods received the most rainfall in a day since records started in 2001, when 17.8 mm were recorded. However the lowest-ever monthly total also occurred during the year, when only 4 mm were reported in February 2019.

Figure 25 also presents the rainfall data collected at the airport precinct during the year (green line). This clearly shows that precipitation at the airport is significantly lower than at Bottom Woods which is only 3-4 km away. Total precipitation at the airport during the year amounted to 286 mm which is 6% less than the previous year.



**Figure 25: Monthly and long-term average rainfall at Bottom Woods Meteorological Station and at the airport July 2017 to June 19**

Another key meteorological parameter measured at Bottom Woods is the amount of sunshine. More sunshine means less cloud which is one of the key determinants for safe flight arrival on the Island. Figure 26 shows the total hours of sunshine per month compared to the long-term average. The seasonal pattern is clearly shown, with less sunshine (and more cloud) being experienced in the late winter/early spring months and more sun during summer. During 2018-19, spring was cloudier than normal, but summer and autumn were sunnier, which corresponds to the period of below-average rainfall.



**Figure 26: Hours of sunshine per month at Bottom Woods Meteorological Station, 2018-19**

## 8 CONCLUSIONS

During this second full year of operations, the Environmental Management Systems have become well embedded into the day-to-day activities of the airport. The value of ongoing monitoring is becoming evident as we can start to see seasonal and year-on-year trends in a number of indicators. Understanding these trends will help us predict events and take proactive actions to prevent incidents from recurring. For example, removal of the common saltbush plants from the airfield before they start fruiting would lower the pigeon birdstrike risk considerably. We also now understand that the precinct gardens are still vulnerable to rabbit predation and although it is more aesthetic to remove the fences from the gardens, this is not possible yet.

We are also seeing an increasing number of Peaceful doves at the airport as well as a rapid rise in the number of masked boobies in the southern airspace. Investigations are required to determine the reason for these increases and proactive actions taken.

The situation regarding the Island's capability for water quality monitoring was disappointing and frustrating. Just as the Island had received and commissioned a comprehensive set of analytical equipment at the Hospital Laboratory, the Technician left the Island and the position was vacant for seven months. This makes it extremely difficult to ensure that the water provided to the airport and aircraft is safe to drink and that the effluent discharges from the airport are in compliance with the required standards. It is hoped that regular water quality monitoring will be resumed in the coming year, with the presence of both the equipment and staff at the Hospital Lab.

### Targets for 2019-2020

- Annual audit in August 2020;
- EMS update in February/March 2020;
- WHMP update in February/March 2020;
- Quarterly risk assessment reviews;



- Proactive environmental management to prevent incidents from occurring;
- Regular water quality monitoring and analysis will be resumed;
- Take the first steps towards becoming carbon neutral;
- Improved compliance with the EMS and with the Key Performance Indicators listed in the Executive Summary of this AER.