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ANNUAL ENVIRONMENTAL REPORT FOR ST HELENA AIRPORT

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ANNUAL ENVIRONMENTAL REPORT FOR THE ST HELENA AIRPORT 2020 - 2021

September, 2021



Photo: C Williams

**Prepared by
Bryony Walmsley**

ANNUAL ENVIRONMENTAL REPORT FOR THE ST HELENA AIRPORT 2020 - 2021

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FOREWORD

The aviation industry experienced a tumultuous time during the reporting period. The rapid spread of COVID-19 brought about border closures and restrictions, bringing international air travel to an almost full stop. Nevertheless, in some ways St Helena Airport benefited from these unprecedented times, with new and larger types of aircraft using the airport. The airport remained open and operational throughout the pandemic period, showing the determination and loyalty of airport staff towards keeping this vital link to the rest of the world open and available. The protective measures put in place at the airport also meant that the Island remained COVID-free throughout the reporting period, further demonstrating the airport staff's professionalism and adherence to international standards of cleanliness and health protection.

Gwyneth Howell

CEO & Accountable Manager

November 2021



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, Craig Williams and James Kellett of St Helena Airport, Nick Stevens (Biosecurity Officer), the Bottom Woods Met Office and the Airport Met Office.

In addition, I would like to express my gratitude to Tavonga Chikwenhere for contract management.

Photographs are courtesy of Airport staff.

LIST OF ACRONYMS

AAM	Accountable Airport Manager
ACI	Airports Council International
AER	Annual Environmental Report
AFF	Airport Fuel Facility
ANRD	Agriculture and Natural Resources Division
ASSI	Air Safety Support International
ATC	Air Traffic Control
CO ₂	carbon dioxide
DVOR	Doppler VHF Omni-Directional Radar
EMD	Environmental Management Division (of SHG)
EMS	Environmental Management System
ENR&PP	Environmental and Natural Resources and Planning Portfolio
EO	Environmental Officer
FMC	Fuel Management Contractor
FTR	Fire Training Rig
HoCA	Head of Civil Aviation (St Helena)
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 ²	square metre
mg	milligram
NOTAM	Notice to Airmen
OWS	Oily Water Separator
PBP	Prosperous Bay Plain
PPE	Personal Protective Equipment
RFFS	Rescue and Fire Fighting Service
SHAL	St Helena Airport Ltd
SHG	St Helena Government
SHNT	St Helena National Trust
SOP	Standard Operating Procedure
STP	Sewage Treatment Plant
T&SDP	Treasury and Sustainable Development Portfolio
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 fifth Annual Environmental Report (AER) for St Helena Airport Ltd. (SHAL) and it covers the period 1st July 2020 to 30th June 2021. 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 bulk fuel facilities in Rupert's Valley or at the Airport, as these are under the control of the fuel management contractor (FMC).

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, 25 (83%) have been achieved, two have only been partially met, and three have not been fulfilled. This is a similar level of performance compared to last year due to some ongoing issues that are taking a long time to resolve. The three non-compliances were:

- Failure to meet all the IATA water quality standards for potable water delivered to the aircraft;
- Water consumption is still high due to frequent pipe leaks and the unavailability of Borehole 5;
- There were two level 3 hydrocarbon spills on the apron.

Closely linked to the first non-compliance listed above is the fact although all other monitoring activities take place as required, monthly airport potable water quality testing by the Department of Public Health on St Helena has only taken place on three occasions over the past year, instead of monthly as required by IATA. This is due to staff leave and staff shortages, but it does mean that SHAL cannot meet the required IATA water quality standards consistently. SHAL have therefore procured a new instrument

to accurately measure the chlorine concentration in water being supplied to aircraft, and take the necessary steps to rectify the disinfectant levels when required.

The other partially compliant aspect is the quality of the STP effluent. The effluent quality is steadily improving, but there are still occasions when one or more parameters is out of the specified limits.

KPI	Description	Assessment rating 2019-20	Assessment rating 2020-21	Comments
LEGAL COMPLIANCE				
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
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.
Compliance with all international aviation industry environmental laws and standards	No incidents of non-compliance with aviation industry environmental laws and requirements	No	No	It has not been possible to test for all the required IATA water quality parameters due to staff shortages. See s. 4.3.2 and 7.2.2
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
The Legal Register is reviewed and updated as and when required	The Legal Register is up to date	Yes	Yes	Last updated in March 2020
ENVIRONMENTAL MANAGEMENT STRUCTURES AND REPORTING				
The Airport's Environmental Policy is posted in public areas	Policy is reviewed once per year	Yes	Yes	A framed poster of the Environmental Policy is posted in the Combined Building and the Terminal Building
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.

KPI	Description	Assessment rating 2019-20	Assessment rating 2020-21	Comments
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"> Environmental Officer Assistant Environmental Officer Environmental Consultant 	Yes	Yes	See s. 4.1
Reporting commitments achieved (as per requirements of the EMS)	100% completion of the following: <ul style="list-style-type: none"> Monthly EO reports Annual update of EMS; Annual audit; AER. 	Yes	Yes	Monthly reports were submitted every month. The EMS was updated in March 2020. The annual audit was conducted virtually in August 2020. The AER is contained in this document.
Monthly meetings held (as per EMS)	The EO attends all monthly airport meetings, and environmental issues are on the agenda	Yes	Yes	
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 biosecurity	Partial	Partial	All aspects are being monitored as per the EMS except water quality due to staff shortages in the Dept. of Public Health. See Chapter 7.
EMPLOYMENT, COMMUNITY AND STAKEHOLDER ENGAGEMENT				
Number of complaints received	No serious complaints received; Less than 3 minor complaints per month	Yes	Yes	No complaints have been received at all.
Employment of Saints	At least 50% of the permanent employees at the airport are Saints	Yes	Yes	86% of the permanent staff at the Airport are Saints. See s. 5.1
Environmental induction	All new employees, contractors and concessionaires at the airport receive	Yes	Yes	See s. 5.1

KPI	Description	Assessment rating 2019-20	Assessment rating 2020-21	Comments
	environmental induction, including the environmental Code of Conduct			
Environmental training	All new permanent airport employees receive training on the EMS and WHMP	n/a	Yes	
Access to Post Box walks is provided	Access to the Gill Point and King and Queen Rocks Post Box walks is provided	Yes	Yes	Access to the King and Queen Rocks Post Box walk is available, but no organised tours took place during the year. However, access was granted to someone taking part in a virtual London Marathon, as described in s. 5.3.
ENVIRONMENTAL MONITORING AND PERFORMANCE				
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
Environmental database	All monitoring data are entered onto the environmental monitoring database and it is up to date	Yes	Yes	The database systems were checked during the annual audit. See Chapter 7.
Impact on landfill facilities	Adherence to the Waste Management Plan (WMP) to apply the waste mitigation hierarchy	Yes	Yes	As much waste as possible is 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
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
Minimise impact on Island water supplies	Airport to minimise use of island water supplies	No	No	Borehole 5 is out of commission and frequent leaks in the pipeline between the meter at Bradleys and the airport have resulted in high water consumption figures. See s. 7.2.4

KPI	Description	Assessment rating 2019-20	Assessment rating 2020-21	Comments
Incidents of dust emissions over prescribed limit	No exceedances over permitted limits recorded	Yes	Yes	Dust emissions are within prescribed limits. See s. 7.2.1
Incidents of effluent discharges over prescribed limit	No exceedances over limits stated in the EMS are recorded	Yes	Partial	Quarterly analyses indicate that effluent is mostly within the limits set out in the EMS, but there have been occasional exceedances. See s. 7.2.2
Incidents of significant accidental spills (oil, diesel, chemicals)	No level 3 incidents or greater involving accidental spills	No	No	Two small level 3 hydrocarbon spills occurred on the apron. Both were cleaned up as per the EMS SOPs. See s. 4.3.1
Erosion of natural water courses	No evidence of significant erosion caused by uncontrolled runoff from the airport and its facilities	Yes	Yes	A minor amount of erosion is occurring underneath the FTR OWS pipe outlet, undermining the masonry work. Recommendations to rectify this have been made following the annual audit. See s. 4.3.2.
Incidents of illegal driving, plant collection, animal trapping	No level 3 incidents or greater occurred	Yes	Yes	No level 3 incidents have occurred but a level 2 off-road driving incident was recorded. See s. 4.3.2.
Rare and endangered species affected	No level 3 incidents or greater involving biodiversity issues	Yes	Yes	No incidents recorded.
No increase in pests and predators noted	Pest and predator monitoring and control programme in place	Yes	Yes	Rabbit, cat and pigeon numbers have decreased significantly. See s. 7.2.6.
No increase in invasive plant species and/or species which attract birds	Monitoring and weed control programmes are in place.	Yes	Yes	Ongoing monitoring for invasive alien species, together with proactive removal of problem plants has resulted in a considerable decrease. See s. 7.2.7
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 fifth Annual Environmental Report (AER) for the St Helena Airport covering the period 1st July 2020 to 30th June 2021.

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 bulk fuel facilities in Rupert's Valley or at the Airport, as these are under the control of the Fuel Management Contractor (FMC).

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 2020-21 year ahead (Chapter 8).

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



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

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3 SUMMARY OF AIRPORT ACTIVITIES DURING THE YEAR

3.1 Notable events and milestones

It was an interesting and exciting year for the airport with regards to aircraft arrivals. The reporting year saw three 'firsts' for the airport: in July 2020, a Bombardier Global 6000 aircraft completed the first non-stop flight from the Island to Europe and the largest commercial aircraft to operate to the Island – a Boeing 757-200 arrived. In June 2021, an Airbus A320 brought in a part to fix a hydraulic leak on the Boeing 757-200. This was the first Airbus A320 to land at St Helena airport (Plates 1-3). The use of the Boeing proved the airport could handle such a large aircraft (from both a technical and operational perspective), and proved vital in the fight against Covid-19 by bringing vaccinations to the Island resulting in more than 97% of the adult population of the Island being fully vaccinated by June 2021.

Another milestone reached was the highest number of passengers leaving the airport on a single aircraft – 130 passengers left in June 2021 on the Boeing 757-200.



Plate 1: This Bombardier Global 6000 aircraft is the first to fly non-stop from St Helena to Europe



Plate 2: First Boeing 757-200 to land at St Helena airport (HLE)



Plate 3: First Airbus A320 to land at HLE (on right of photo)



Plate 4: Medevac flight (foreground) with the Titan Airways Boeing 757-200 behind

3.2 Aircraft and passenger movements

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Aircraft

A total of 39 fixed wing aircraft landed during the past year, which is 75% fewer compared to the previous reporting period (Figure 2). This total was made up as follows:

Scheduled flights:	0
Charters:	19
Medevacs:	19
Private flights:	0
Refuelling stops:	0
Calibration flights:	1 (plus calibration flight checks on island)

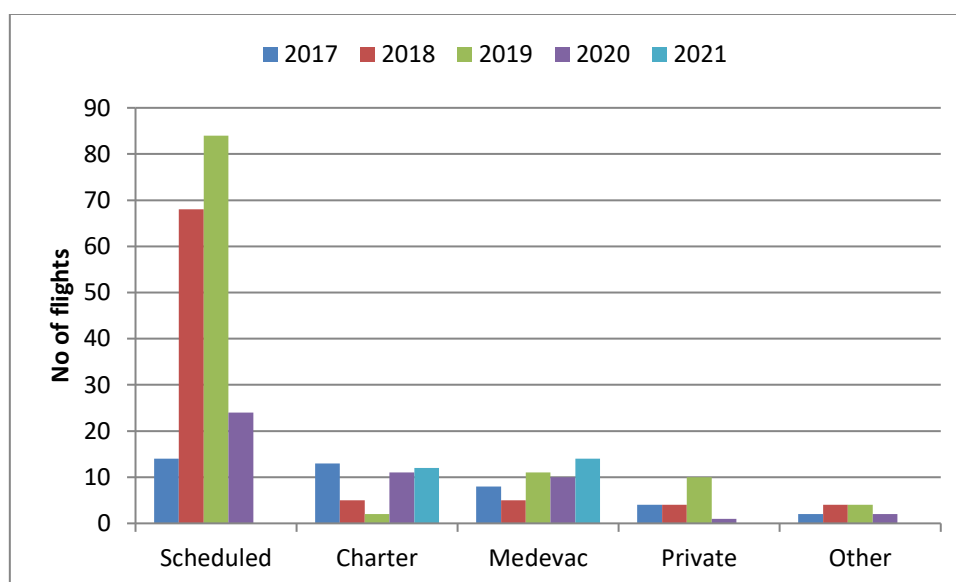


Figure 2: Flight volumes by type

Most of the charter flights involved the use of the Boeing 757-200 aircraft (Plate 2), but a single flight of a Bombardier Global 6000 (Plate 1) was also used for charter purposes. The medevac flights mostly use the Dassault Falcon 50EX and 20F aircraft (Plate 4), but a Hawker Beechcraft 800XP was also used for this purpose. As usual, the certification flights were carried out using a Beechcraft 200 Super King Air. In June 2021, an Airbus A320 arrived at the airport with a part required to fix a hydraulic leak on the Boeing 757-200 (Plate 3). Thus the airport hosted seven different types of aeroplane during the reporting period.

Unfortunately, all scheduled flights from South Africa to St Helena planned for the entire reporting period were cancelled due to the global coronavirus pandemic. It remains to be seen when flights from South Africa will resume.

Passengers

The Covid-19 pandemic clearly had a significant effect on passenger numbers, which were 75% down on the same period the previous year (Figure 3). This was due to the suspension of scheduled flights from/to South Africa, and the governmental lockdowns and restrictions instituted on both sides of the South Atlantic. As such, it was only chartered aircraft (mostly by St Helena Government (SHG)) that maintained air access to St Helena, with flights originating from, and routing to, the UK. These flights did however, provide valuable information on the technical and operational aspects of a UK-St Helena route, a route that many had hoped for since the inception of the airport. Whether there is sufficient commercial and financial support for such a route post-pandemic remains to be seen, but it has certainly allowed the UK to have direct and speedy access to its Overseas Territory.

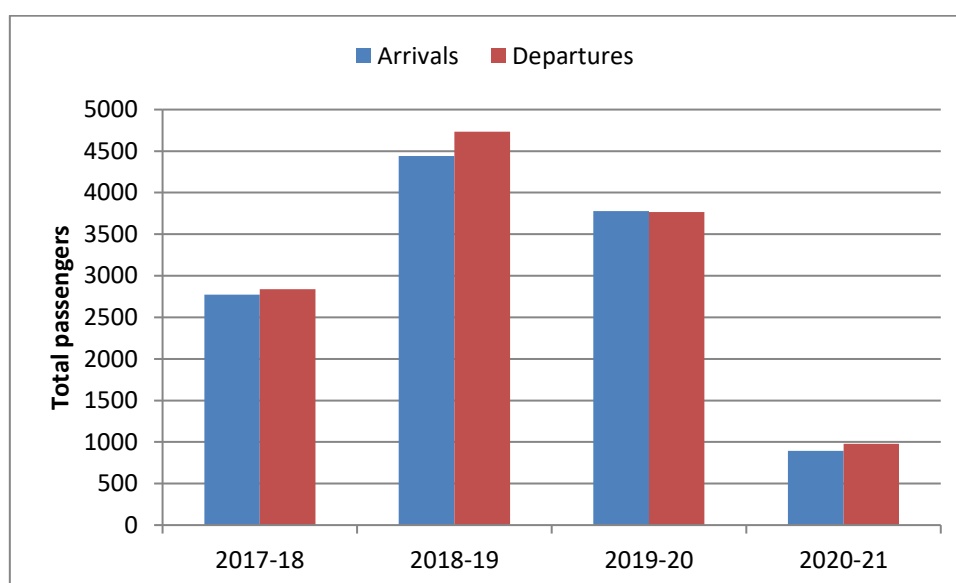


Figure 3: Annual passenger numbers from 2017 - 2021

A total of 894 passengers arrived at the airport during the reporting period, and a total of 979 departed (Figure 3). Usually visitor numbers are highest during the summer, but with the prevailing Covid-19 travel restrictions in place in the UK during that period (November to February), a summer peak was not as pronounced as usual (Figure 4). It can be seen that once St Helena was placed on the UK Government's 'green list' for travel, visitor numbers increased from May 2021. In spite of all the challenges, every month saw at least one passenger come through the airport, reiterating the importance of keeping the airport open during those difficult times (Figure 4).

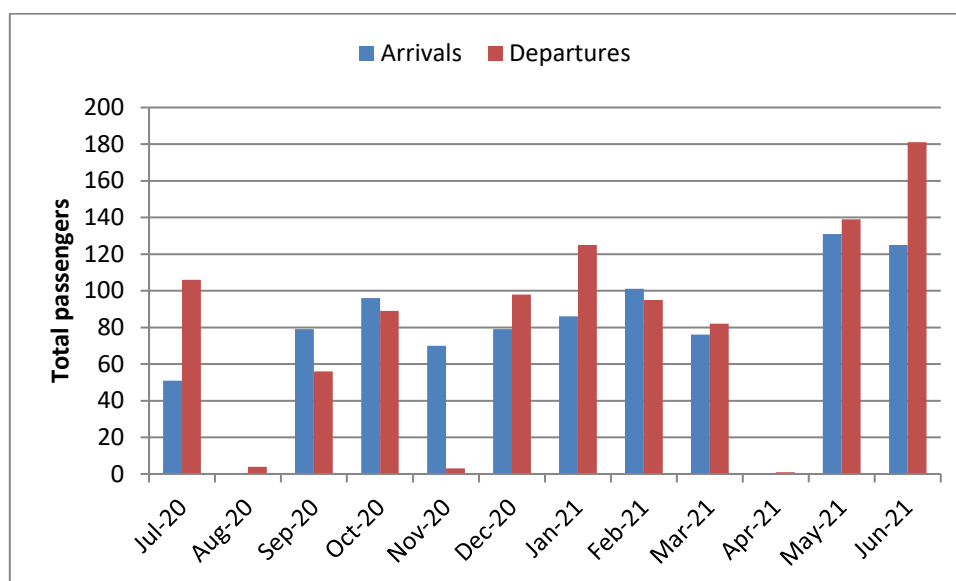


Figure 4: Number of arriving and departing passengers from July 2020 to June 2021

The reporting period also saw the highest number of medevac flights to date (Figure 2); this was largely due to the suspension of the flights to South Africa which would normally host medical patient travel for treatment, but resourcing shortages in the Health Department of SHG also had an effect, resulting in a number of cases requiring specialist management that was not available on Island. Again, the airport proved its worth through the support of these medical flights.

All these events showed the importance of the airport to the Island, as it continued to remain open despite the difficulties and uncertainties of the period.

Cargo

Although inbound cargo usually outweighs outbound cargo, this was more pronounced compared to previous years (31.2 tonnes in, versus 2.5 tonnes out), due to a cessation of fresh fish exports on the one hand, and an increase in Covid-related imports (personal protective equipment (PPE) and Covid-19 Astra-Zeneca vaccines) on the other (Plate 5 and Figure 5). Even though the AstraZeneca vaccine was more tolerant of transportation conditions than other Covid-19 vaccinations, the success of the enterprise was due to the positive assistance of a number of agencies and organisations in the supply chain that allowed the roll-out of vaccines on St Helena to be both timely and successful.

The use of the Boeing 757-200, however, did allow for greater payloads of cargo to be brought to the Island, albeit less frequently than prior to Covid. No pets or livestock were imported or exported by air during the reporting period.

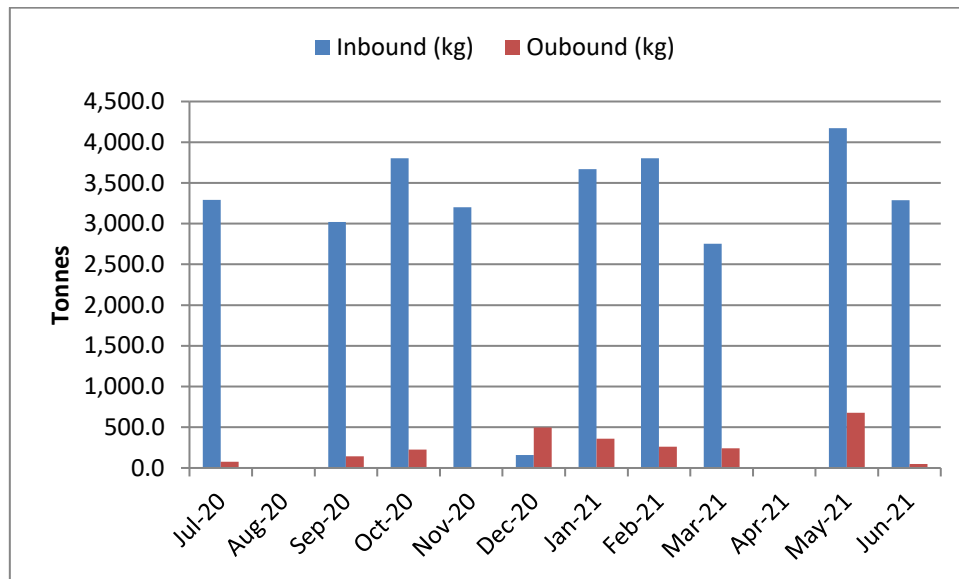


Figure 5: Monthly imports and exports of cargo

3.3 Certification

St Helena Airport retained its operational certification throughout the reporting period. The open-ended Aerodrome Certificate and the open-ended Aeronautical Telecommunication Services Approval Certificate, both issued in October 2018 by Air Safety Support International (ASSI), remained valid. During the reporting period, enhancements were made to the maintenance and inspection processes to allow the flight check frequency (calibration flights) to be increased from 6 to 12 months, whilst remaining compliant with international standards and recommended practices (Plate 6). The lift in the Terminal Building was also re-certified in June 2021.



Plate 5: Covid-19 vaccinations arriving on board the chartered Boeing 757-200



Plate 6: View of Runway 02 from the cockpit of the Beechcraft Super King Air during flight calibration testing

During the year, a decision was made to take part in the Airport Carbon Accreditation Scheme, which is a global carbon management programme for airports that independently assesses and recognises airports' efforts to manage and reduce their CO₂ emissions at each airport. Although the ground-based

component of CO₂ emissions accounts for only 5% of the air transport sector's total carbon emissions, it is still an important step in reducing global CO₂ emissions. Aircraft emissions, which are many times greater than airport emissions, are not included in the Airports Council International (ACI) programme.



Individual airport carbon footprints are independently verified in accordance with ISO 14064 (Greenhouse Gas Accounting) on the basis of supporting evidence. Claims regarding airports' carbon management processes are also independently verified by a group of 117 independent verifiers, based in thirty-six countries.

The main aim of implementing the carbon accreditation programme at St Helena Airport is to implement best practices in carbon management with the ultimate objective of becoming carbon neutral. The programme supports four of the United Nations' Sustainable Development Goals:

- Goal 7: Affordable Clean Energy;
- Goal 9: Industry, Innovation and Infrastructure;
- Goal 12: Responsible Consumption and Production;
- Goal 13: Climate Action.

The ACI programme recognises three areas where carbon emissions may occur:

- Scope 1: direct emissions caused by airport activities e.g. the emergency generators;
- Scope 2: indirect emissions, such as use of electricity (where the emissions are generated by a non-airport entity);
- Scope 3: other indirect emissions such as passenger travel to and from the airport, purchase and transport of aviation fuel.

ACI has identified six levels of certification:

- 1 Mapping - measuring the carbon footprint;
- 2 Reduction - carbon management towards a reduced carbon footprint;
- 3 Optimisation - working with third parties to reduce their emissions;
- 3+ Neutrality - carbon neutrality for direct emissions by offsetting;
- 4 Transformation – transforming airport operations to achieve absolute emissions reductions;
- 4+ Transition – compensation for residual emissions with reliable offsets.

St Helena Airport became the first Overseas Territory airport to achieve ACI Airport Carbon Accreditation. The Level 1 Mapping certification was awarded to SHAL on 4th December 2020 and is valid until 3rd December 2022, and now SHAL is working towards maintaining or improving upon the

current level of certification. The main activity to achieve the second level of certification is to develop a Carbon Management Plan to minimise Scope 1 emissions, which could include:

- Targets to reduce carbon emissions per plane movement by a certain percentage by a certain date from the baseline level established in Level 1;
- A list of the planned measures to be taken such as:
 - Install energy-saving light fittings;
 - Install automatic timers on light switches;
 - Replace electric hand driers with paper towel dispensers;
 - Increase use of renewable electricity;
 - Purchase and utilise electric vehicles for daily operations;
 - Reduce the heat gain/losses in the Terminal Building and Combined Buildings;
 - Monitor and control electricity and fuel consumption;
- Identification of the responsible personnel to deliver on the commitments made in the plan;
- An annual budget to action the planned interventions;
- A timetable for delivery;
- A set of auditable key performance indicators.

Level 2 certification can be obtained when an independent auditor can verify that the Carbon Management Plan is in place and is being implemented.

4 ENVIRONMENTAL GOVERNANCE STRUCTURES

4.1 Environmental Management Team

The environmental management reporting structure in SHAL remained the same during the reporting period, with no changes to personnel. However, changes in SHG meant that Directorates changed to Portfolios in April 2021, resulting in some minor structural changes. The environmental management team, as at the end of the reporting period, is shown in



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Table 1 and the reporting structure within the airport, as well as with relevant SHG agencies is provided in Figure 6.

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Table 1: Environmental management team (as at 30th June 2021)

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

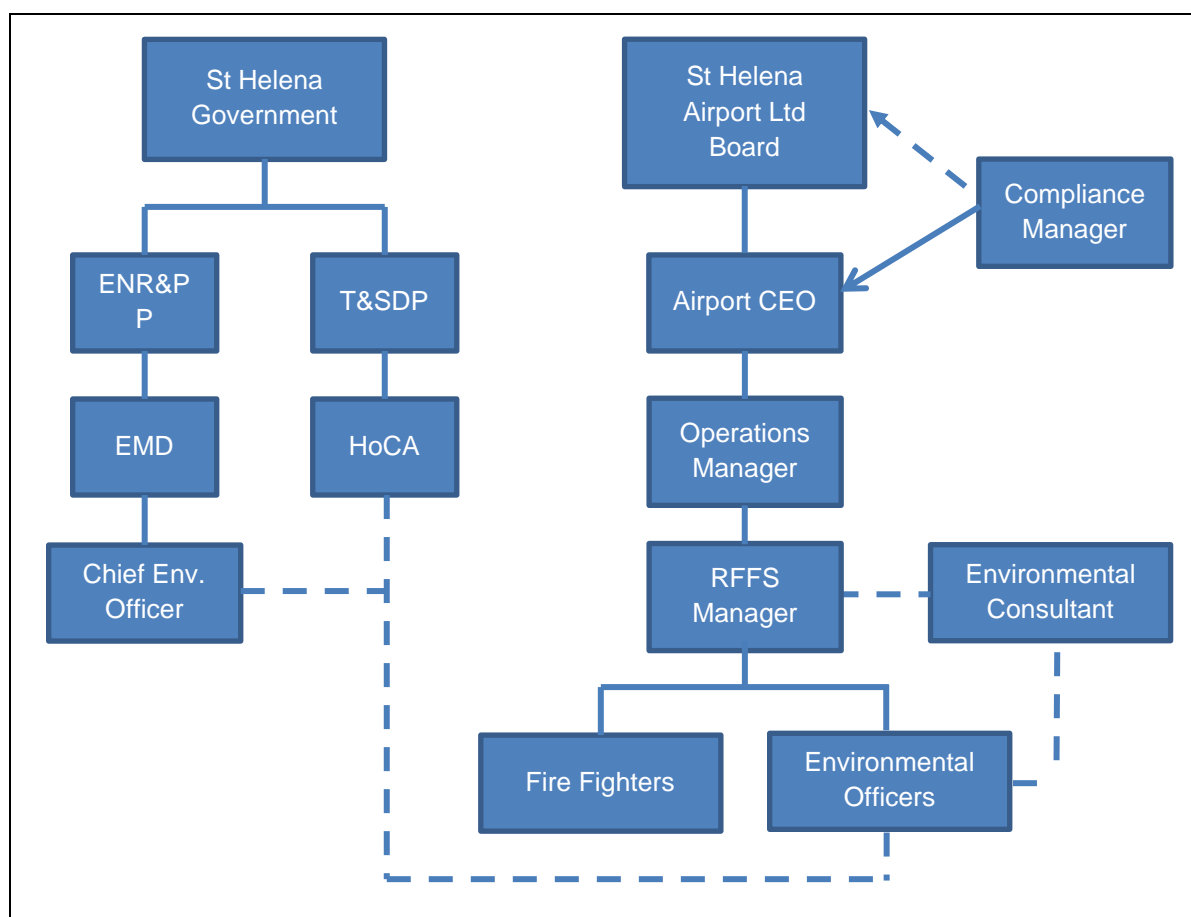


Figure 6: Environmental reporting structure

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;
- Carbon accreditation plan.

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 10 incidents was logged during the reporting period, which is five fewer than the previous year. Two were classified as Level 1 (insignificant) events, two were classed as Level 2 or minor incidents and six were considered to be events with a moderate level of risk to the environment, health or reputation of SHAL (Figure 7).

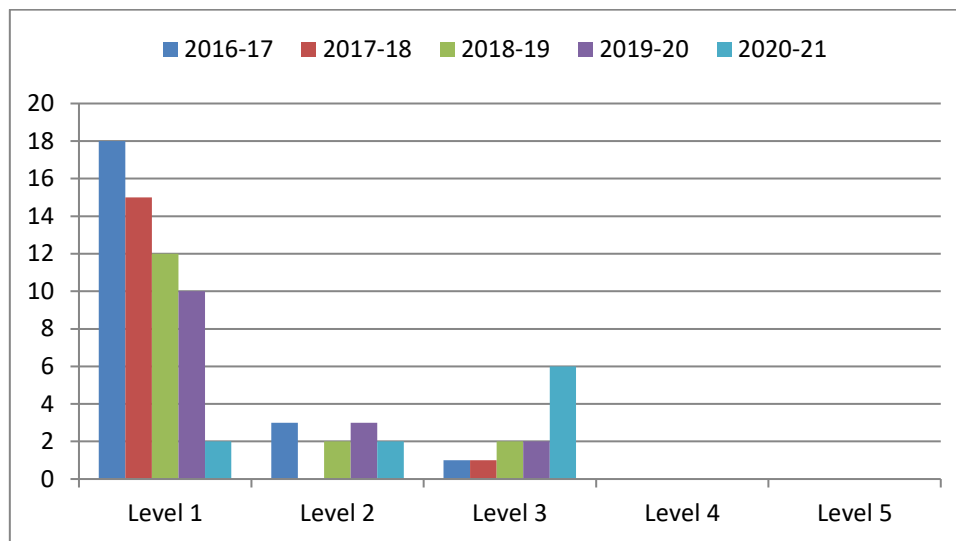


Figure 7: Incident ratings

Most of the incidents occurred on the apron (6) and runway (1), while 2 were reported from the FTR and two from the generator compound (Figure 8).

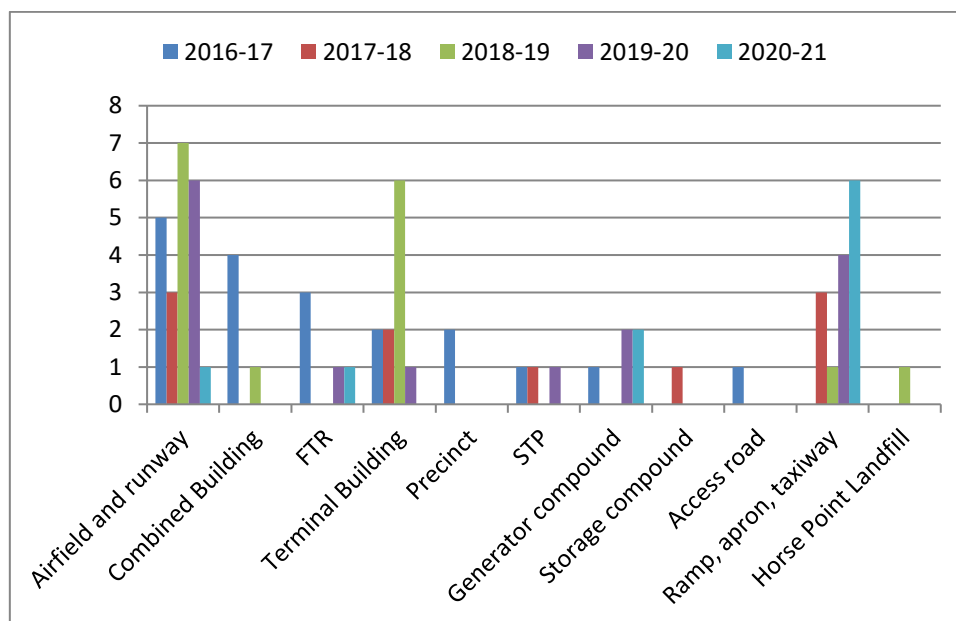


Figure 8: Number of incidents by area

All but one of incidents during the year involved hydrocarbon spills and leaks, and one was a wildlife incident (Figure 9). No waste management issues were reported.

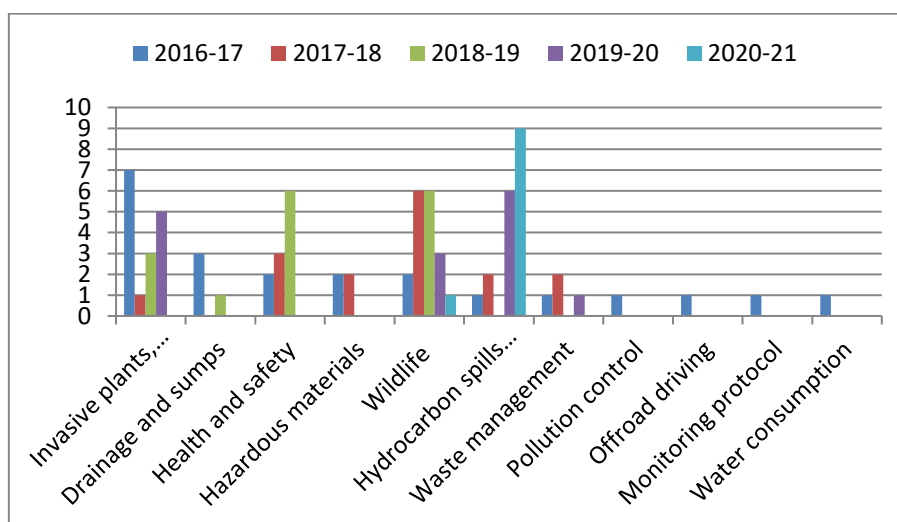


Figure 9: Incidents by type

4.3.2 Annual audits

The EMS specifies that an environmental audit of airport operations should take place on an annual basis. Due to travel restrictions caused by the Covid-19 pandemic, the annual audit was carried out virtually by the Airport's Environmental Consultant in August 2021. Prior to the audit, the auditor sent lists of documents to be inspected, aspects of the airport operation to be photographed or videoed and issues to be discussed, as well as an audit programme. It can be seen from Figure 10 below that there were no major findings, only two minor observations and ten recommendations. This is a great improvement compared to previous audits.

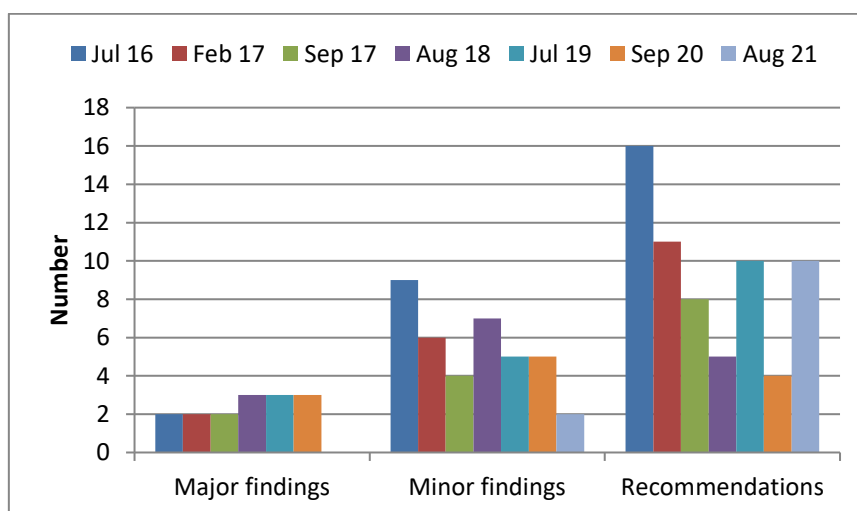


Figure 10: Audit findings

The two Observations (minor findings) from the August 2021 audit related to: off-road driving on the clear and graded areas next to the runway during invasive vegetation clearance activities; and an erosion issue underneath the FTR storm drainage outlet pipe masonry work.

Most of the ten Recommendations related to water in some way, including:

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- The urgent need to get Borehole 5 working again so that this water, instead of expensive treated water can be used for firefighting and irrigation purposes;
- The need for regular, monthly testing of the tap water supplied to the airport and to aircraft as per the IATA requirements;
- The need for regular, quarterly monitoring of the sewage plant effluent; and
- The need for a more formalised process relating to requesting water sample analysis, including the use of Chain of Custody forms.

Other Recommendations related to pest monitoring and watering of the precinct beds and seedling collection.

An important part of the auditing process is to make sure that the corrective actions identified to remedy the findings are actually implemented successfully. Of the 3 major findings of the previous (September 2020) audit, two had been resolved and one was in progress at the time of the August 2021 audit. The lack of monthly water quality monitoring by the Department of Public Health due to a shortage of personnel meant that only three sets of samples were taken for analysis at the Hospital Laboratory. This falls well below the IATA requirement of monthly sampling.

Of the five Observations (minor findings) made during the September 2020 audit, three have been resolved, one (water wastage at the AFF) is in progress and one (high water usage) has not yet been resolved. In both the latter cases, the issue has been caused by the long-running and as yet unresolved disputes between SHG and various operating partners – in this case, the Fuel Management Contractor (Puma) and Connect respectively.

Of the four formal recommendations made in the September 2020 audit, the auditor noted that three had been addressed and the fourth (more environmental monitoring training for the EOs) had not been possible due to Covid-19 restrictions.

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 Chapter 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, environmental management training, 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 30th June 2021, the airport had 26 full-time employees and 4 apprentices. The apprentices are recent school leavers who have been offered one-year apprenticeships in security, IT and mechanics. Two will be retained at the end of the trial year. Of this complement of staff, 86% are Saints and 14% are expats. Work is ongoing to develop succession plans so that Saints can continue to operate their airport. SHAL continues to invest resources into the next generation of potential employees by starting its Young Firefighters scheme in September 2020, which will run for two years. It involves nine school-age youngsters in firefighter training and allows them to gain credits towards their GCSEs. Additionally, as part of its community focus objective, SHAL has collaborated with SHG Social Care to offer placements to two adults with learning difficulties. They work at the airport two days a week, assisting the general administrative team and shadowing other teams to learn how the airport functions.

In addition, there are 34 part-time agency staff, with between 13-25 being present at the airport on flight days, depending on the type of aircraft being serviced. 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 two duty-free shops and a retail shop, while Island Images has the contract to provide 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. However, due to the reduced number of flights due to Covid-19, all but the airside café and shops run by Rose and Crown have been closed for the entire year under review. 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 and longer-term staff have to undergo refresher training. Over the course of the year the EO conducted Environmental Induction training for 49 individuals from SHAL, ATNS, Solomons and Puma (the FMC). All airport staff have received training this year on a variety of aspects relating to Covid-19, such as donning and removing PPE, aircraft operator Covid-19 measures and IATA Suspected Communicable Diseases training.

Covid-19 also had an effect on the ability of the airport to operate. A lack of access to external organisations to service or maintain equipment meant that the airport had to become even more self-sufficient and adaptable. For example, much use was made of online training courses and video conferencing to allow staff competency to remain current and to allow system maintenance to continue.

5.2 Complaints

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

5.3 Open Days and Stakeholder Engagement

SHAL participated in a number of stakeholder engagement and community participation activities during the reporting period, including:

- Plant-a-tree in July 2020 – SHAL staff donated 25 gumwoods to the Millennium Forest and took part in their planting (Plate 7);
- Primary school visits in July 2020 – Pilling and St Paul's reception and year 1 children paid the airport a visit, to be shown around and to go through the process of check-in, security, departures, and arrivals (Plates 8-9);
- Young Firefighters scheme started in September 2020 – 9 youngsters started on the two-year scheme to learn about fire safety and firefighting;
- Marathon route in October 2020 – the airport and the King and Queen Rocks Post Box walk route were included in part of Neil Foster's successful virtual London Marathon route in aid of two charities: SHAPE and a UK-based charity Aerobility (Plate 10). Members of SHAL joined him for the airport route, along with members of the public and the SHAPE charity;
- SHAPE Superhero Fun Day in November 2020 – the airport hosted a fun day for members of the public, organised by SHAPE (Plates 11-14). The day was a huge success and there are plans to repeat it in November 2021. Activities included a rope slide, a firefighting demonstration and plenty of stalls and fun games;
- The Annual Environmental Report for 2019-2020 was published on the Airport website in February 2021 for the public to view;
- Beavers overnight camp in April 2021 – an overnight camp at the airport for the Beaver Scouts was accommodated. This involved a number of activities and events including an RFFS demo, the turning on of the runway lights in the evening, and a virtual link up with other Beavers across the globe as part of the 35th anniversary of the formation of the Beavers in the UK (Plates 15-17);
- Sunflower creche visit in April 2021 – 40+ members of the Sunflower creche of varying ages visited the airport to have a look around, watch demonstrations, and to be treated to ice cream! (Plates 18-19)
- Input into the Island tourism strategy – members of the Senior Management Team, representing SHAL, had a chance to input into the short-, medium-, and long-term tourism strategy for the Island following the Covid-19 pandemic, as well as be involved with the local Chamber of Commerce;
- Appearances on local radio – members of SHAL staff made a number of appearances on local radio to update listeners on what was happening at the airport in general, and to promote specific events such as the SHAPE Superhero fun day and the visit to the airport by the Beavers;
- Posts to Facebook – the SHAL Facebook page was started in April 2020 and continue to be a source of information and education as various posts are made about events, international recognition days (reading, environmental, and so on) and updates on flight movements.



Plate 7: Airport staff planting trees at the Millennium Forest



Plate 8: St Paul's Primary school visit



Plate 9: Pilling Primary School pupils checking out the fire trucks from a safe (and dry) distance!

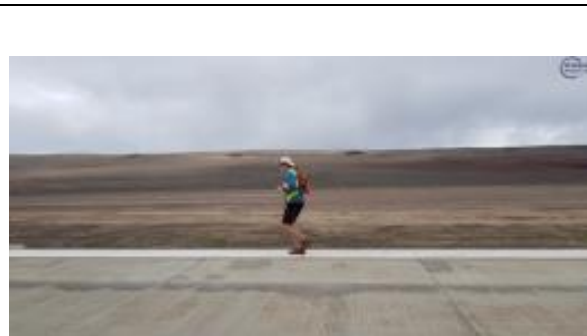


Plate 10: Neil Foster running part of his virtual London Marathon at the airport



Plate 11: If the helmet fits... Superheroes trying on the firefighting kit



Plate 12: Superheroes fun day



Plate 13: Superheroes queuing up to 'enter' St Helena through Immigration



Plate 14: Superheroes in the arrivals hall



Plate 15: Beavers on firefighting duties



Plate 16: Beavers racing down the taxiway



Plate 17: Beavers bedding down for a night at the airport!



Plate 18: Special permission was granted for the ice cream van to visit the airside section

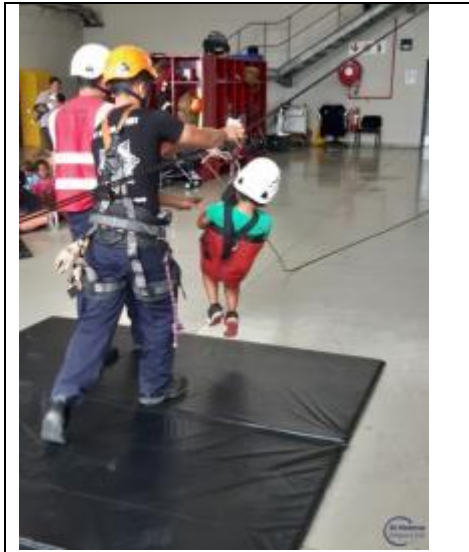


Plate 19: Children from the Sunflower crèche enjoying a slide

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 Landscaped gardens and plants

The cessation of the St Helena Landscape and Ecological Mitigation Plan (LEMP) project in March 2021 resulted in additional environmental areas of the aerodrome passing over to SHAL to manage going forward. Some gardening equipment was hand over by LEMP and SHAL will continue to consult with both the St Helena National Trust (SHNT) and ANRD when required.

In this section we report on the car park areas, road verges and other bare areas in front of the terminal buildings (airport precinct), which were originally planted by the LEMP team but which are now maintained by airport personnel. We also report on endemic and invasive species on the airfield.

Airport precinct

The precinct gardens have fared quite well in spite of some rabbit and insect damage. The Scrubwoods in particular are flourishing (Plate 20) and there are many small self-germinated seedlings emerging. The St Helena Ebonies are also surviving, but are more susceptible to drought and lack of water than the Scrubwoods. There are several challenges facing the team in keeping the precinct beds in good condition, such as: rabbit grazing in spite of the 'rabbit-proof fences'; the need for regular watering, which is a challenge during drought periods; pest infestations such as mealy bugs and army worms; and the Hair Grass (*Eragrostis saxatilis*) tends to smother the other plants if not regularly cut back. Twenty-three new Scrubwoods were planted in August 2020 to replace St Helena Ebonies and Scrubwoods lost to rabbits.

One of the last areas to be planted by the LEMP team was the area around the STP near the entrance to the airport. This area was planted with 1,202 species in 2018-19, comprising 80 Boxwoods (*Melissia begoniifolia*), 115 St Helena Ebonies (*Trochetiopsis ebenus*), 27 St Helena Goosefoots (*Chenopodium helenense*), 845 Scrubwoods (*Commidendron rugosum*), 14 Teaplants (*Frankenia portulacifolia*) and 121 Tufted Sedge (*Bulbostylis lichtensteiniana*). Without visiting the site due to Covid, it is difficult to determine how these species are faring, but the photographs show that the Scrubwoods are beginning to thrive (Plate 21).

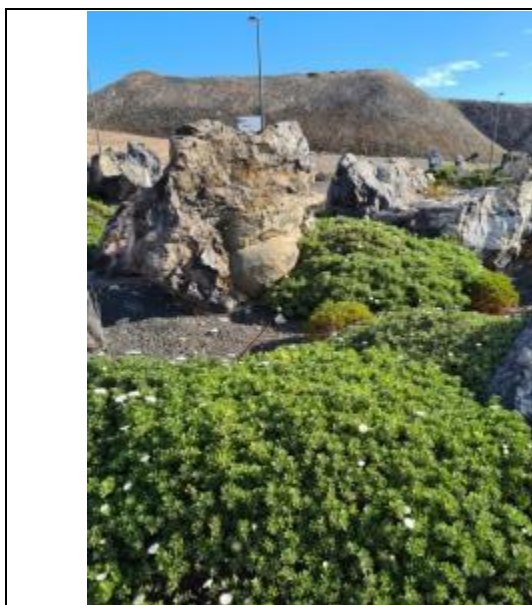


Plate 20: Flowering Scrubwoods in the precinct garden



Plate 21: The STP bed with some thriving Scrubwoods (left of photo) and self-sown Saltbush (foreground and right of photo)

Airfield

A large number of self-sown Salad Plants (*Hypertelis acida*) were found to be growing near the GBAS station on the east side of the airfield. These plants are often grazed by rabbits, but with the rabbit controls in place, these plants were thriving (see cover photo). A large number of small Babies Toes (*Hydrodea cryptantha*) seedlings were also observed near the apron OWS, which is another pleasing development (Plate 22).

A number of invasive plants grow in the clear and graded area alongside the runway, notably Saltbush (*Atriplex semibaccata*), St Helena Ice Plant (*Mesembryanthemum crystallinum*) and creeper (*Carpobrotus edulis*). These plants are undesirable for two reasons: the berries and fruits attract birds which pose a bird strike risk; and secondly, when the plants die, the dead mats of vegetation break away from the ground and roll over the runway, leaving debris which is a risk for aircraft. Staff from SHAL, ATNS and the UK Met Office spent two days weeding the runway strip in June 2021 and removed 14 bakkie loads and 3 trailers full of plant material which were taken to Horse Point Landfill Site (HPLS) for disposal (Plate 23).

The Environmental Officers keep a close watch on the three areas where the invasive alien plant, the Namibian Ice Plant (*Galenia* spp.), tends to germinate. A few plants were found near the terminal Building on the perimeter road in August 2020 and 5 kg of plant material was removed, bagged and

disposed of as per the protocols in the EMS. In addition, invasive plants such as Wild Mango (*Schinus terebinthifolius*), Tungi (*Opuntia* spp.), Wild Tobacco (*Nicotiana glauca*), Australian Acacias and Wild Tomato are regularly removed from the Dry Gut fill and other areas near to the airport to prevent birds from flocking to the area; 65 kg were removed in February 2021.



Plate 22: Self-sown Babies Toes near the OWS on the airfield



Plate 23: Removal of dead plant material from the clear and graded areas alongside the runway

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 3).

Table 3: Monitoring frequency

Aspects which are monitored:				
Daily	Weekly	Monthly	Quarterly	Ad hoc
<ul style="list-style-type: none"> Seabirds (bird strike risk) Wildlife Pests and predators Climate 	<ul style="list-style-type: none"> Waste Wildlife Pests and predators 	<ul style="list-style-type: none"> Potable water STP effluent Resource use Seabirds Wildlife Pests and predators Biosecurity and invasive spp 	<ul style="list-style-type: none"> Air quality (dust) 	<ul style="list-style-type: none"> FTR and OWS effluent (if flowing) Noise Biosecurity and invasive spp

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. 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.

As might be expected, there is more dust in the bucket nearest to the runway (bucket 2) than in bucket 1 (compare Figures 11 and 12). There was a lot more dust than normal in the first quarter of 2021 due to the above average hot and dry conditions, but the quantity collected decreased as the year progressed with the onset of wetter weather.

In spite of the increase in dust fall out in buckets 1 and 2 during Q1, the figures shown are per quarter and are thus all well within the maximum allowed, which is 600 mg/m²/day.

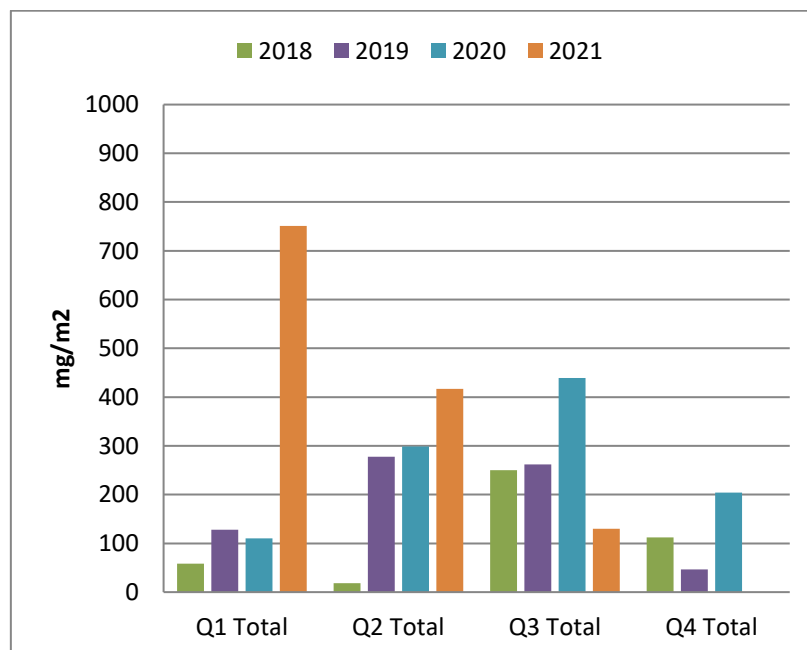


Figure 11: Quarterly average dust measurements for bucket 1

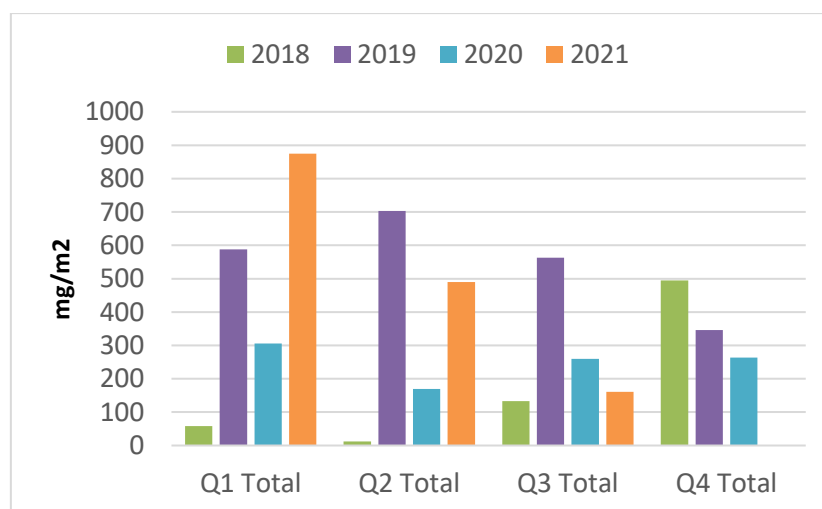


Figure 12: Quarterly average dust measurements for bucket 2

7.2.2 Water quality

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. The water supplied by Connect St Helena Ltd from Hutt's Gate Water Treatment Works is treated with chlorine prior to distribution. In order to ensure public health standards, the Department of Public Health is supposed to conduct monthly monitoring of the water quality in the taps in the public cafés in the Terminal Building, the staff kitchen in the Combined Building and the water supply point for aircraft, as per IATA requirements. However, in the reporting period, only three sets of samples were collected and analysed by Public Health due to staff shortages in the department and at the Hospital Laboratory. The results show that the chlorine concentrations are too low and therefore the colony count was elevated indicating the potential for microbiological pollution. Connect adds the correct amount of chlorine at the water treatment plant at Hutt's Gate and the storage tank near to the airport, but if the water is not used quickly, the chlorine disintegrates. Due to the low levels of potable water usage at the airport, water remains in the storage tank for some days before it is used. During this time, the chlorine concentrations reduce, thus affecting its disinfectant properties. In order to resolve this issue, SHAL purchased a photometer during the reporting period to accurately measure the chlorine in the tap water and dose it with additional chlorine before loading it onto flights to meet IATA specifications. In addition, SHAL has been supplying bottled water to all staff, visitors and passengers at the airport.

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 (OWS) 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 insufficient to take a sample, but there are no obvious signs of pollution downstream of any of these discharge points.

Samples of the STP effluent are supposed to be analysed on a quarterly basis by the Hospital laboratory, but only three sets of samples were tested during the reporting period. The samples were analysed for the following parameters: nitrate plus nitrite, phosphate, electrical conductivity, pH, copper, iron and manganese in order to check the effluent against the EMS standards. At this point in time, the Hospital laboratory does not have the analytical capacity to monitor other key elements such as ammonia, chemical oxygen demand and biological oxygen demand, which would typically be monitored in STP effluent.

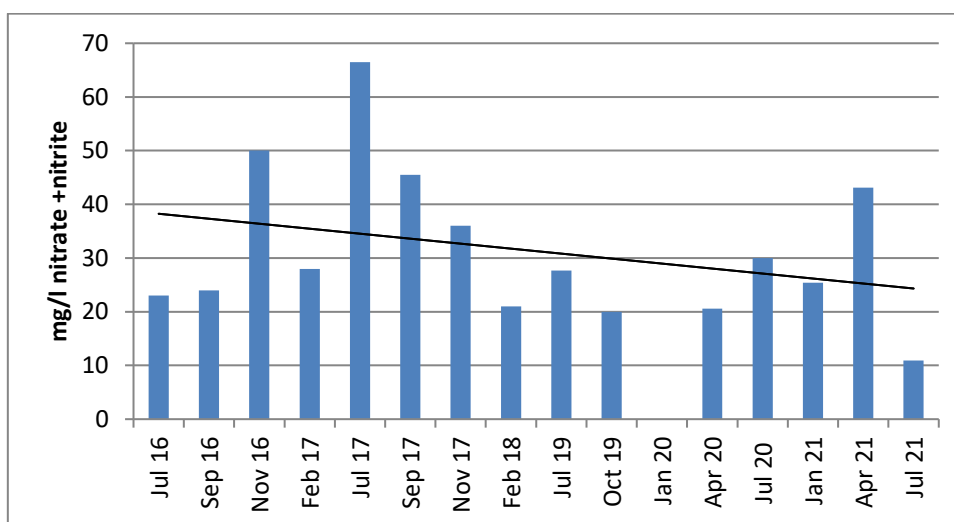


Figure 13: Nitrate plus nitrite concentrations in the STP effluent

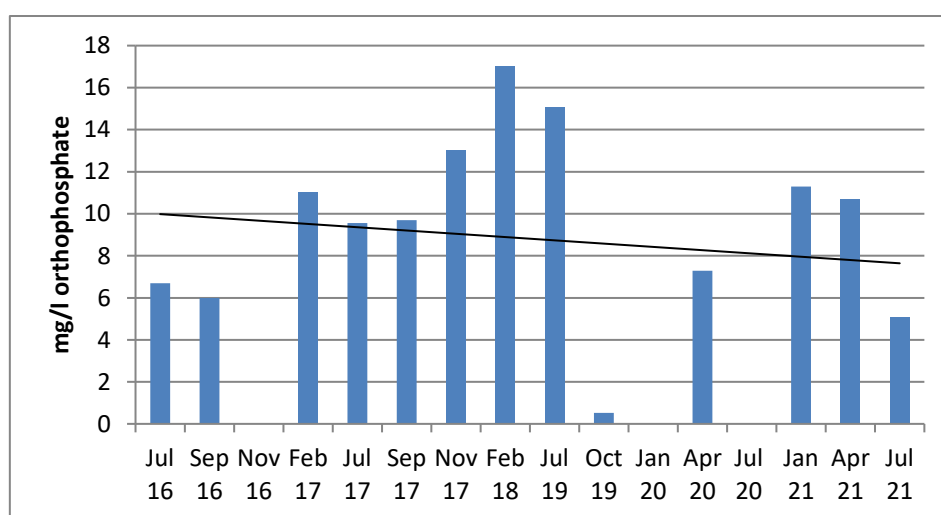


Figure 14: Orthophosphate concentrations in the STP effluent

While there is still some variability in quality in the effluent, there has been a gradual improving trend in all parameters analysed including nitrate (Figure 13) and orthophosphate (Figure 14) which now fall within specified limits.

7.2.3 Waste management

There is a comprehensive system of waste management in place at the Airport which has to 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 (Plate 24).



Plate 24: Maintenance on the bird netting at the HPLS domestic waste dump



Plate 25: Special, locked disposal containers for Covid-19 waste

Over the year, a total of 1,660.5kg of hazardous waste was generated and 2,145 kg of non-hazardous wastes were produced (Figures 15 and 16). As would be expected given the 75% reduction in flights and passenger numbers, the total amount of non-hazardous waste is far lower than in previous years, but the volume of hazardous waste was higher than normal due to a) all the Covid-19 related medical waste (Plate 25); and b) a significant amount of maintenance work was done on airport vehicles and mobile equipment, which generated oily wastes and batteries from the workshop.

Other small quantities of hazardous wastes produced at the airport include fluorescent light fittings, small batteries and old electronic equipment (Figure 16).

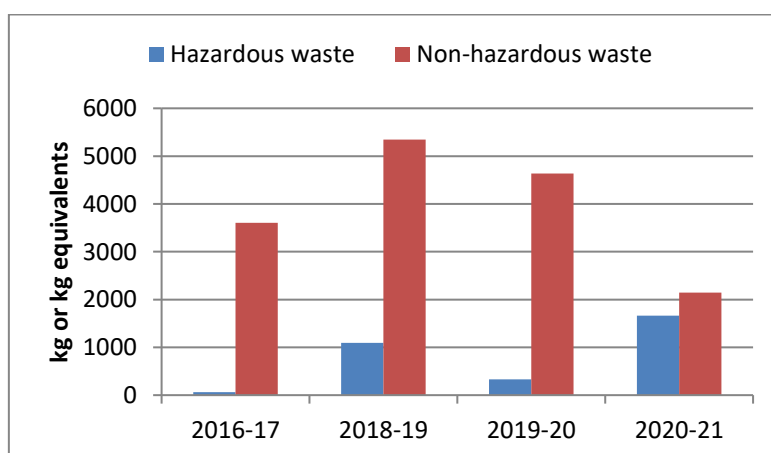


Figure 15: Annual waste production

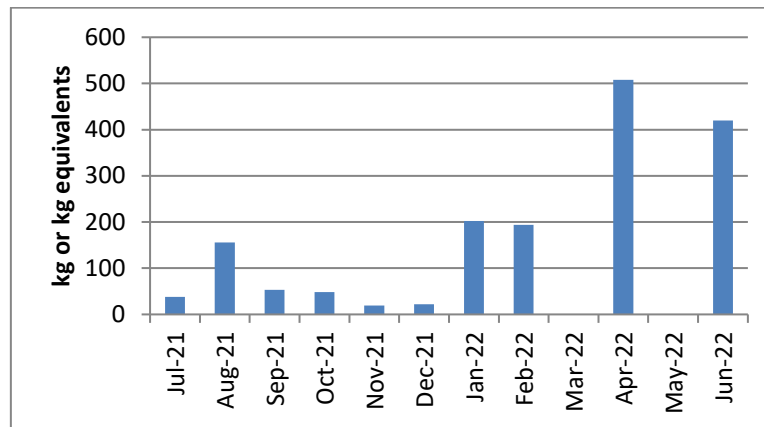


Figure 16: Hazardous waste production per month, 2020 - 21

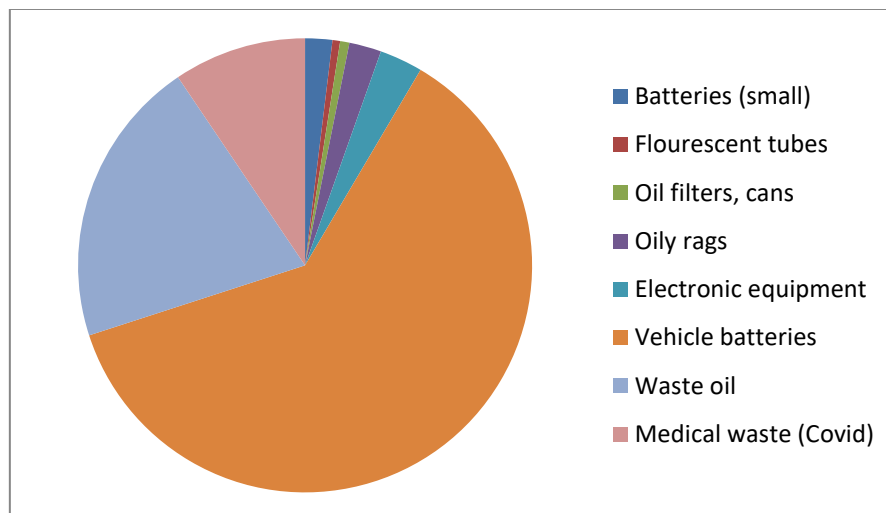


Figure 17: Breakdown of hazardous waste by type

As expected with the reduced number of flights, the amount of non-hazardous waste has decreased this year in spite of the bi-monthly larger charter flights from the UK (Figures 15 and 18). Most of this waste is general waste, paper and cardboard from the Combined and Terminal Buildings, scrap metal and invasive plants (Figure 19).

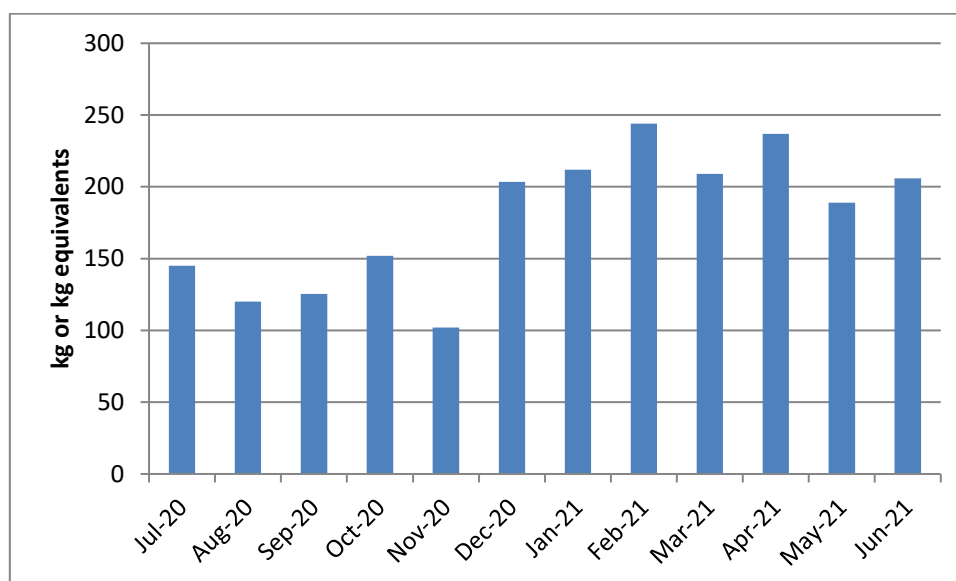


Figure 18: Non-hazardous waste produced per month, 2020 - 21

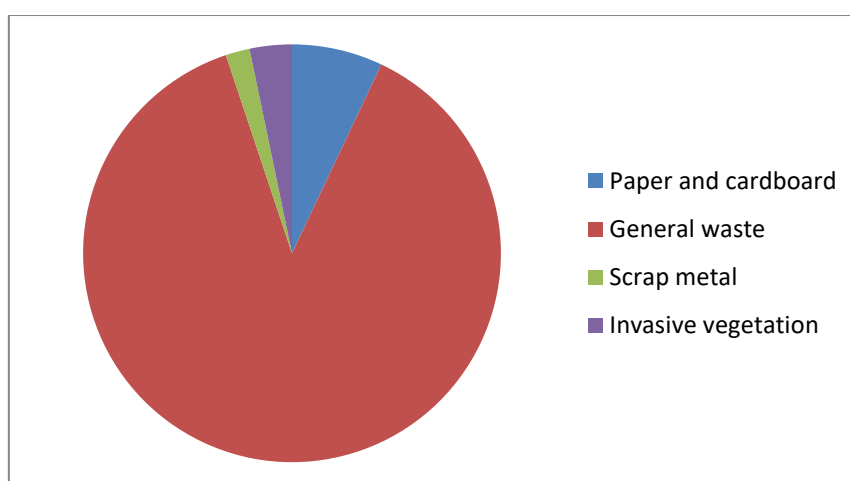


Figure 19: Breakdown of non-hazardous waste types (in kg or kg equivalents)

7.2.4 Resource Use

Water

The Airport used to obtain its water from two sources: from Connect for use in all the buildings, and from borehole 5 in Dry Gut for washdown purposes, firefighting, and irrigation. However, the borehole pump broke in July 2020 and there has been no progress in fixing it. This is due to a dispute about ownership between SHG and Connect. Until this issue is resolved, SHAL has to purchase treated water from Connect for firefighting, irrigation and washdown purposes, which pushes up the consumption figures significantly; during the reporting period, the Airport was supplied with 4.5 million litres of water by Connect which is a 6.6-fold increase over the previous year when 682,000 litres was consumed (Figure 20). The high consumption figures can be ascribed to the need for more firefighting water to be held in reserve for the Titan Airways planes (compared to the smaller AirLink jets) and water losses in the pipeline. Frequent leaks have occurred in the pipeline from Bradleys to the Airport e.g. in February, March and June 2021. Whilst the leaks are usually quickly investigated and resolved, their frequency

has meant erratic and high usage at times (Figure 21). SHAL is liaising with Connect to move the water meter from its current position at Bradleys to the airport fence so that only actual airport consumption is metered and paid for, but resolution of this issue is also being held up by the dispute over ownership of the water supply infrastructure to the airport (between SHG and Connect).

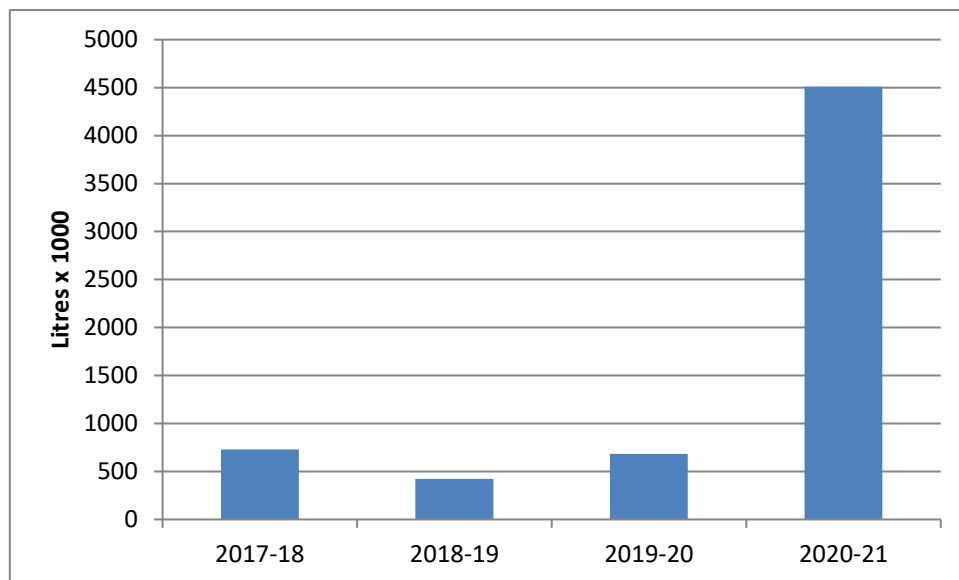


Figure 20: Annual water consumption figures

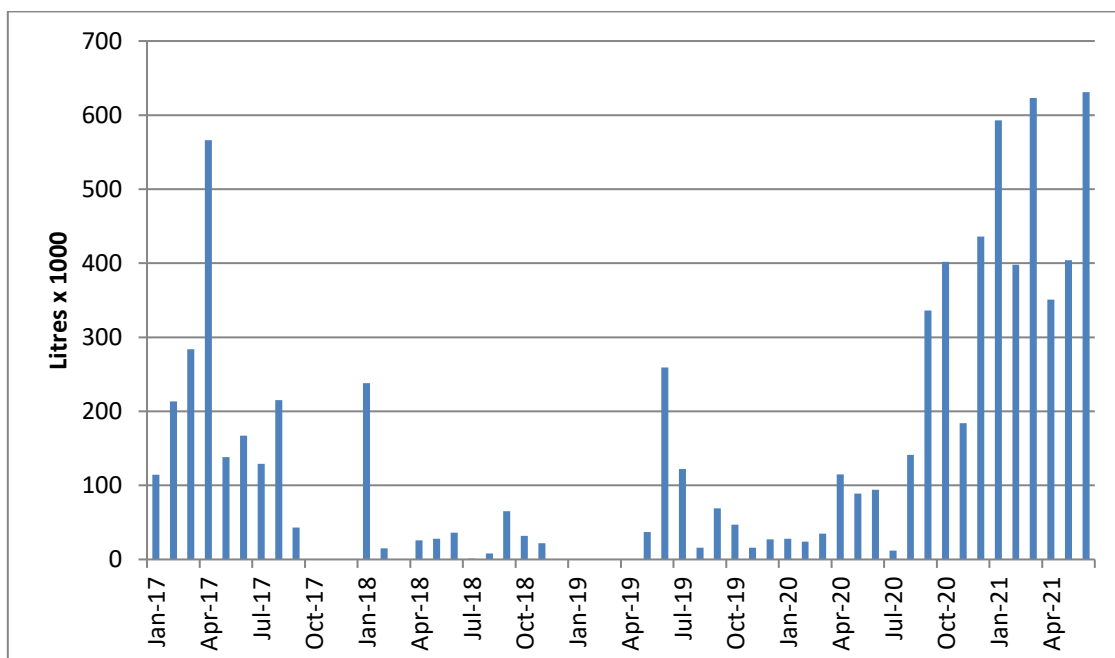


Figure 21: Monthly treated water consumption at the airport

Energy

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The total energy use during the year was 44,790 kWh, compared to 47,268 kWh in 2019-20, which is a slight decrease due to the reduced number of flights and passengers during the reporting period (Figures 22 and 23). A number of measures to reduce power consumption have been taken such as turning off electrical equipment when not in use e.g. air conditioning units, and replacing light bulbs with LEDs where possible. These measures, and others to be implemented when the budget allows, are all part of the efforts to improve energy conservation and obtain Level 2 ACI certification (see s. 3.3).

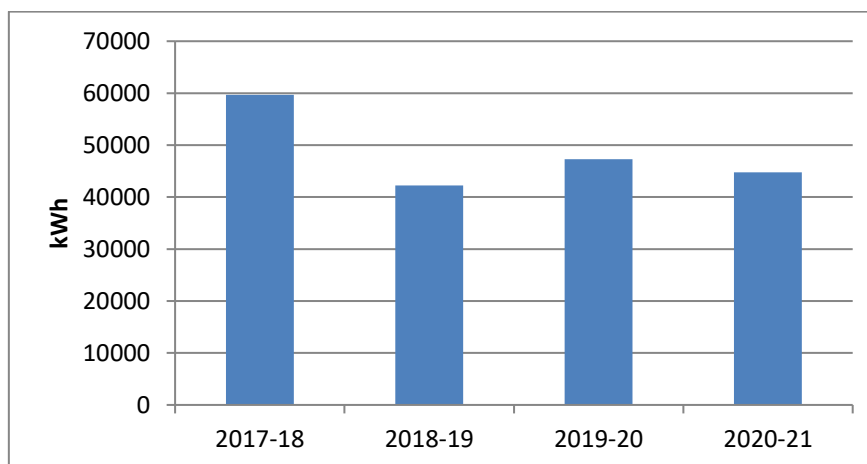


Figure 22: Annual energy consumption

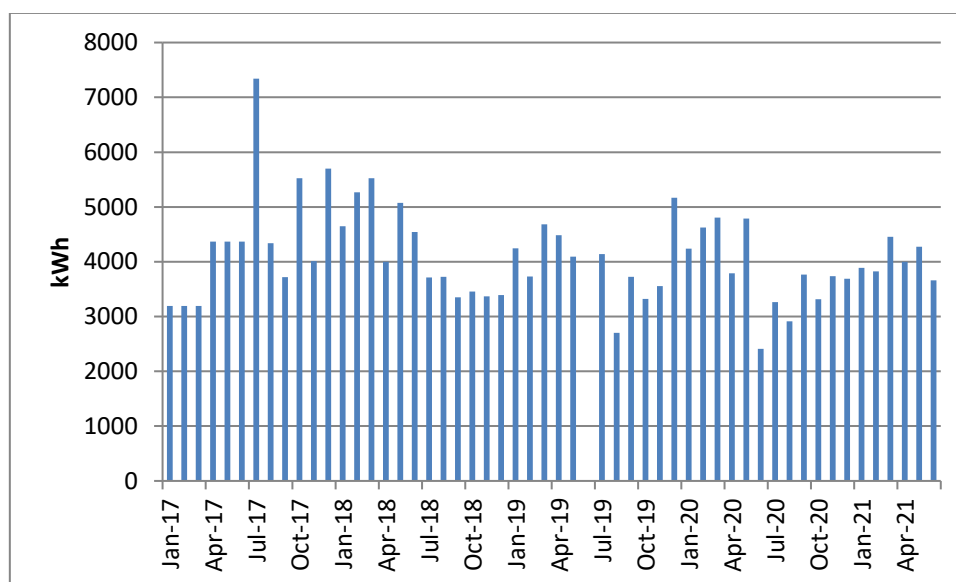


Figure 23: Monthly energy consumption

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 November and March, as demonstrated in the years 2016-17, 2017-18, 2018-19, but

there has been a marked decline in sightings in the last two breeding seasons (Figure 24). The reason for this decline is not known. Only 7 mynahs were observed in this northern sector during the course of the year and no pigeons were recorded.

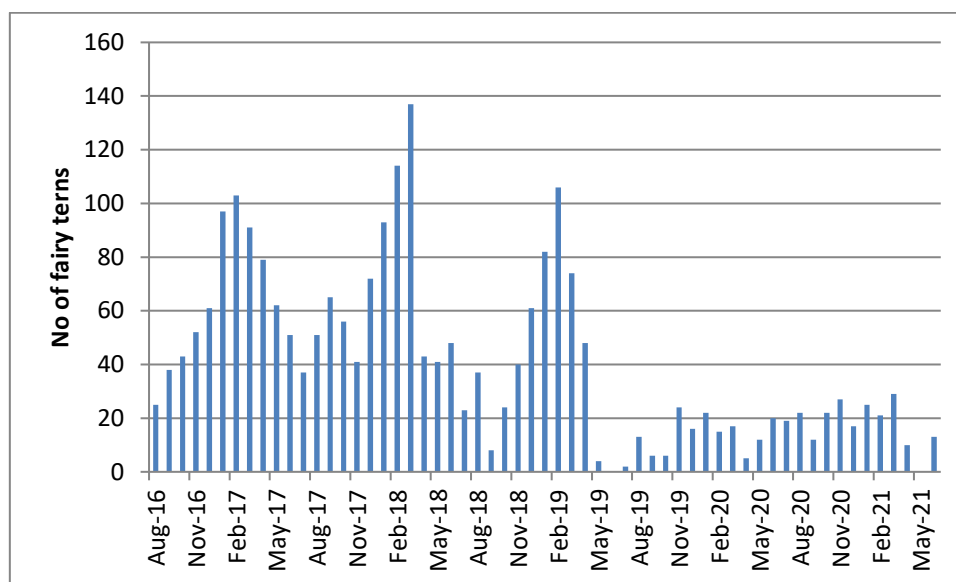


Figure 24: Fairy tern monitoring in northern runway (20) airspace

The southern end of the runway has a higher diversity of birds, with red billed tropic birds, fairy terns and mynahs being frequently seen in the airspace (Figures 25 and 26). 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 (24% of the total, which is 10% down on the previous year) (Figure 26).

It is interesting to note that the composition of the birds observed in the southern airspace has changed significantly since 2018-19 when there was a huge increase in the number of masked boobies and they made up 26% of all species. This was a worrying trend as these birds are large and heavy and pose a higher risk to aircraft than the other seabirds commonly observed around the airport. In contrast, only 6 birds were seen during one month in the 2019-20 period and none were observed during the past year (Figures 25 and 26).

Although the total number of Fairy terns in the southern airspace has decreased this year they have increased as a percentage (from 35% to 65%) of the total bird population observed in this area (Figure 26). The number of mynahs has also decreased significantly and this species only comprised 12% of the total, compared to 26% in the previous year (Figure 26).

There have been no reports from pilots about any bird activity on the landing or take-off zones.

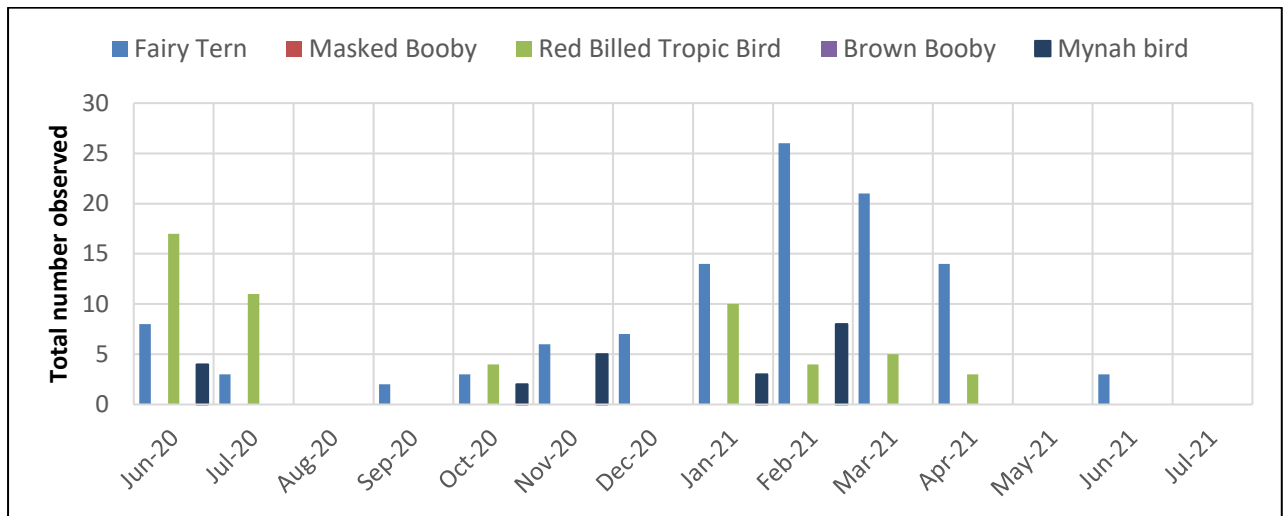


Figure 25: Birds occurring in the southern airspace

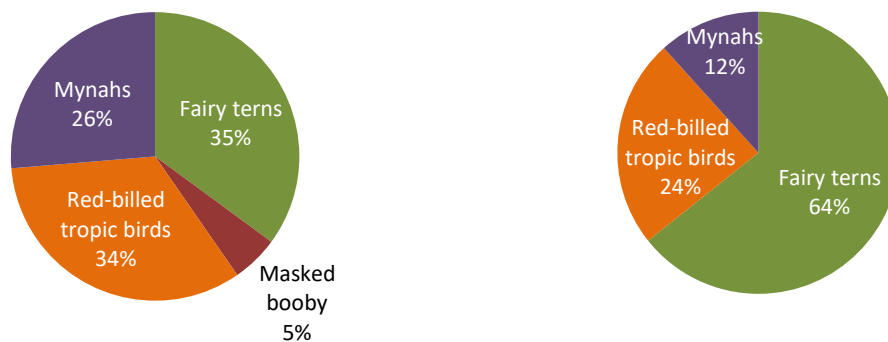


Figure 26: Comparison of seabird composition observed in the southern airspace between 2019-20 (left) and 2020 – 21 (right)

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.

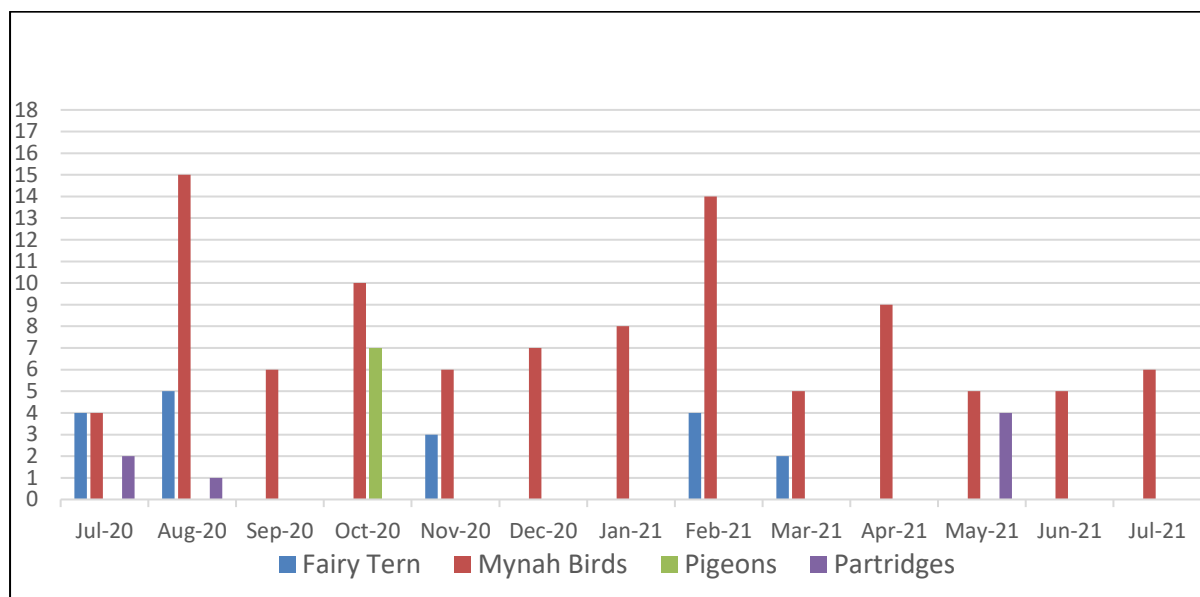


Figure 27: Total number of bird species seen inside the airfield (excluding Wirebirds)

It had been found in previous years that pigeons flocked to the airfield to feast on the saltbush berries, but the low number of pigeons observed on the airfield this year (only 7) is due to the proactive removal of saltbush before the berries set (Figure 27).

Mynah birds also used to be frequent visitors to the airfield, attracted by seasonal food sources e.g. the saltbush berries, but this year numbers are much lower than in previous years, also possibly due to the removal of the saltbush (Figure 27).

Pigeons and mynahs continue to be monitored on a monthly basis at HPLS by the EO and on a bi-annual basis by EMD to ensure that bird numbers do not increase to a point where they could pose a threat to aircraft safety. A combination of bird nets (Plate 24), better waste management and disposal practices and occasional pigeon culling have reduced bird numbers at the landfill to well below the trigger (for action) value of 100 birds.

The drop in the number of Fairy terns seen during the monitoring at the northern end of the runway (see Figure 24), is also apparent in the data for bird sightings within the airfield perimeter (Figure 27). In 2019-20, an average of 6 Fairy terns were observed most months of the year, whereas this year, there have only been 23 birds seen at an average of about 2 birds per month (Figure 27). The reasons for the decline in Fairy terns, is not known.

Chukar partridges were only observed on three occasions in the past year (Figure 24) and no Peaceful doves were sighted (Figure 27).

The Wirebird does not pose a threat to aircraft at all due to its very small size, non-gregarious nature and flying habits. Wirebird numbers on the airfield seem to fluctuate hugely, probably in response to the availability of prey and water, but overall, numbers are gradually increasing as shown by the trend line in Figure 28. This is possibly as a result of fewer predators (mynah birds and cats) being observed (see Figures 27 and 29 respectively). Monitoring has also shown the presence of a number of Wirebird nests in the clear and graded areas alongside the runway, taxiway and apron.

The airport forms part of the Island-wide annual Wirebird census undertaken by SHNT. In a 3-hour period in January 2021, Dennis Leo counted 12 adults, 4 chicks and 1 nest.

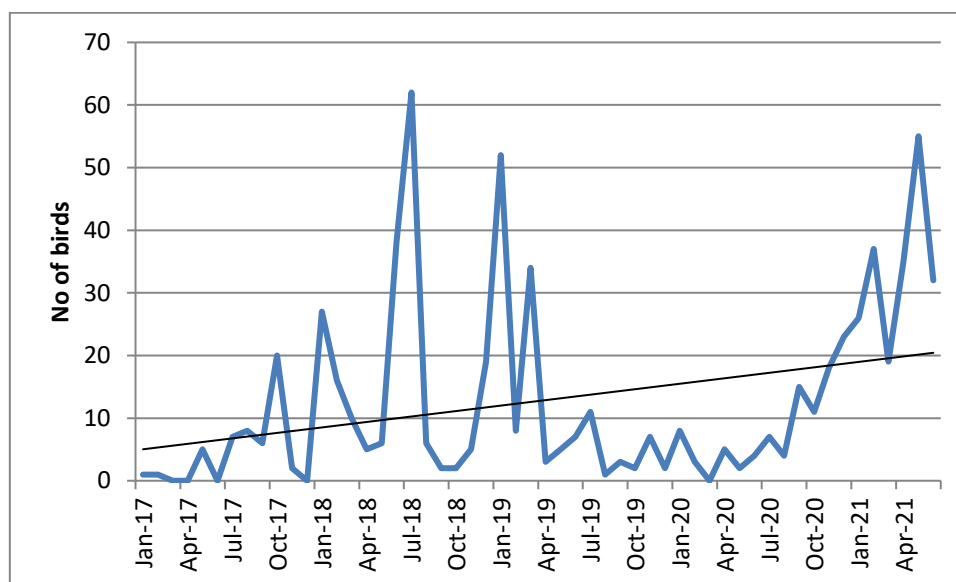


Figure 28: Wirebird observations on the airfield

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. The efficacy of the pest and predator controls can be seen in the significant decline in the number of rabbits and cats seen on the airfield since August 2018 (Figure 29). No cats have been observed since October 2019 and only 3 rabbits were observed during the reporting period. Stray dogs have not been sighted on the airfield, but have been found near the entrance to the airport.

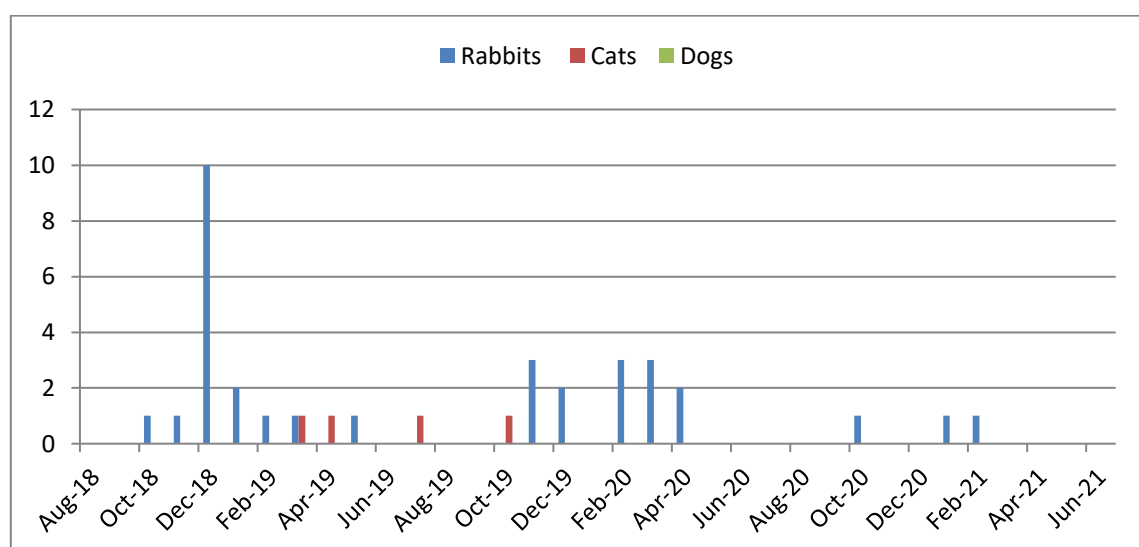


Figure 29: Animals observed on the airfield

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7.2.7 Biosecurity

In this section, biosecurity is discussed in terms of invertebrate monitoring. See s. 6.2 for a discussion on invasive plant species.

Monitoring at five sites at the airport commenced in January 2017 to check 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 covered box, which holds a sticky board. The monitoring sites are checked on a monthly basis by SHG's biosecurity team, when all the sticky traps are carefully collected for analysis.

Unlike last year when most specimens were caught in the Combined Building Stores invertebrate trap (32%), this year, 40% of the specimens were found outside the passenger section of the Terminal Building and the fewest (8%) were found near the cargo bay (Figure 30).

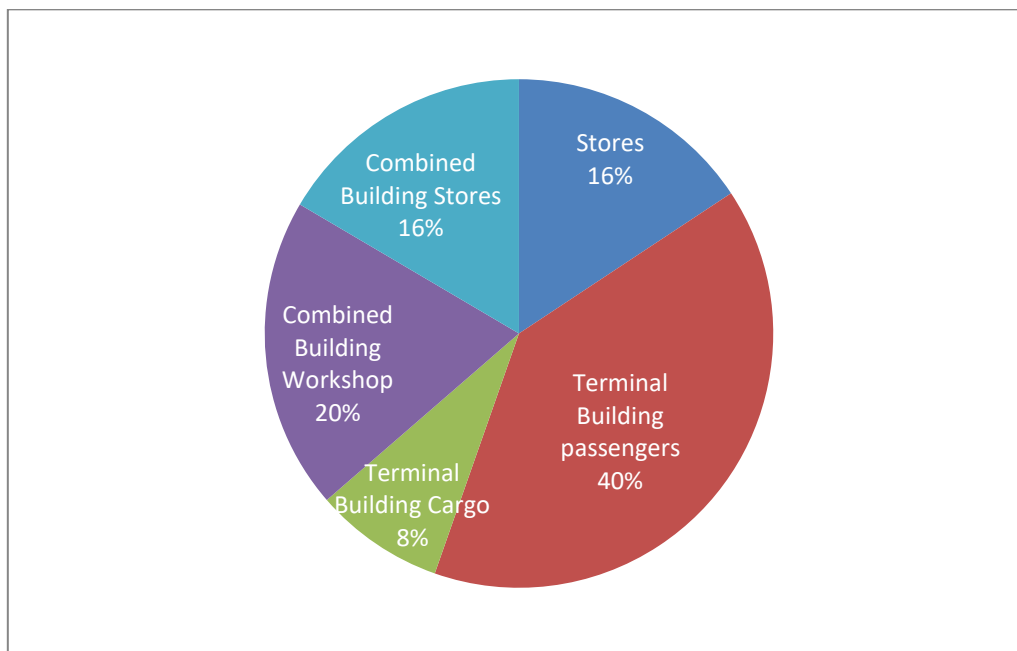


Figure 30: Biosecurity monitoring per airport area, July 2020 to June 2021

The number of individuals caught has fluctuated considerably over the years, with lower numbers experienced during the drought of 2019, when only 89 individuals were trapped. This year the number has risen to 121 individuals representing only 11 species groups, as shown in Figure 31.

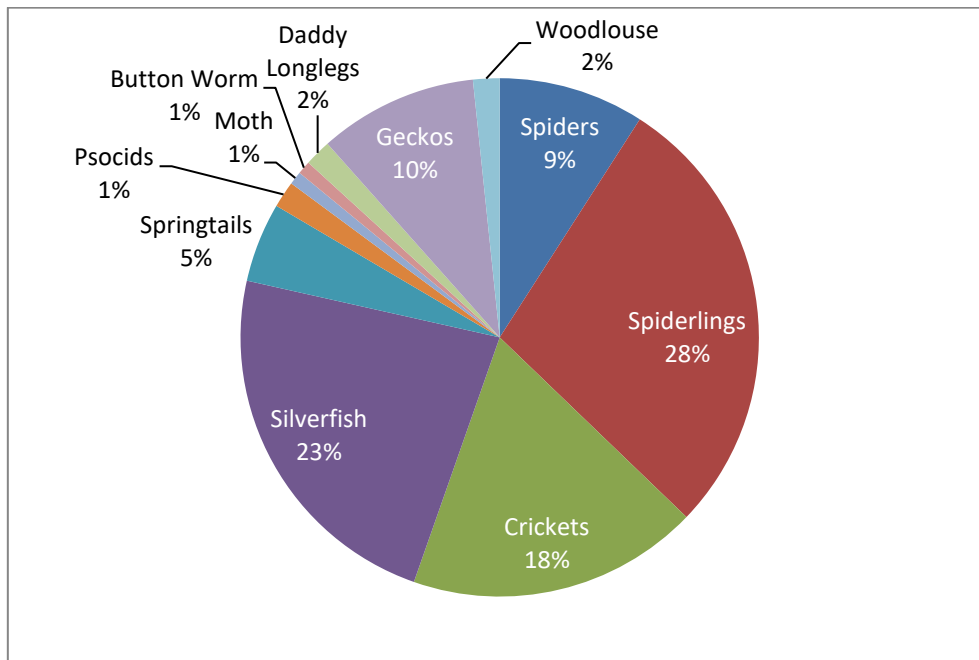


Figure 31: Composition of species caught, July 2020 to June 2021

The majority of the species caught is made up of only five main groups: spiders (cupboard and slaty spiders), spiderlings, crickets, silverfish and geckos. The remaining species groups comprise only 13% of the total found. None of the species caught are new or classed as invasive aliens.



Plate 26: A species of wolf spider found in the Combined Building

7.2.8 Weather

Although the island of St Helena is situated in the sub-tropics, the climate is mild with distinctive southern hemisphere summer and winter seasons. The climate is dictated by a strong orographic effect caused by the sudden uplift of warm moist air as it rises over the island. This causes a steep rainfall gradient between the wetter, higher central Peaks area, which can experience over 1,000 mm of rain per year, and the drier periphery of the Island, which experiences between 100-200 mm per year. The nearby Bottom Woods Meteorological Station (Met Station) lies in the intermediate zone between these two extremes, while the airport lies in the arid coastal zone.

The following data have been sourced from the Bottom Woods Met Station and the Airport's own Met Office. The former is located approximately 2.5 km north-west of the airport at a slightly higher elevation. Records have been kept by the Met Station since 1977, but the airport has only been collecting rainfall and wind data since 2016 (wind) and 2017 (rainfall).

Wind

The Island lies in the south-east trade wind belt and with no other land for thousands of kilometres, the south-easterly winds are constant and strong from year to year, averaging around 16.1 knots at the northern end of the runway (runway 20), 24.9 knots at the runway mid-point and 10.6 knots at the southern end (runway 02) (Figure 32). Monthly average wind speed does, however, vary slightly with the seasons, with the winter months of June to October being noticeably windier than the summer months (Figure 32).

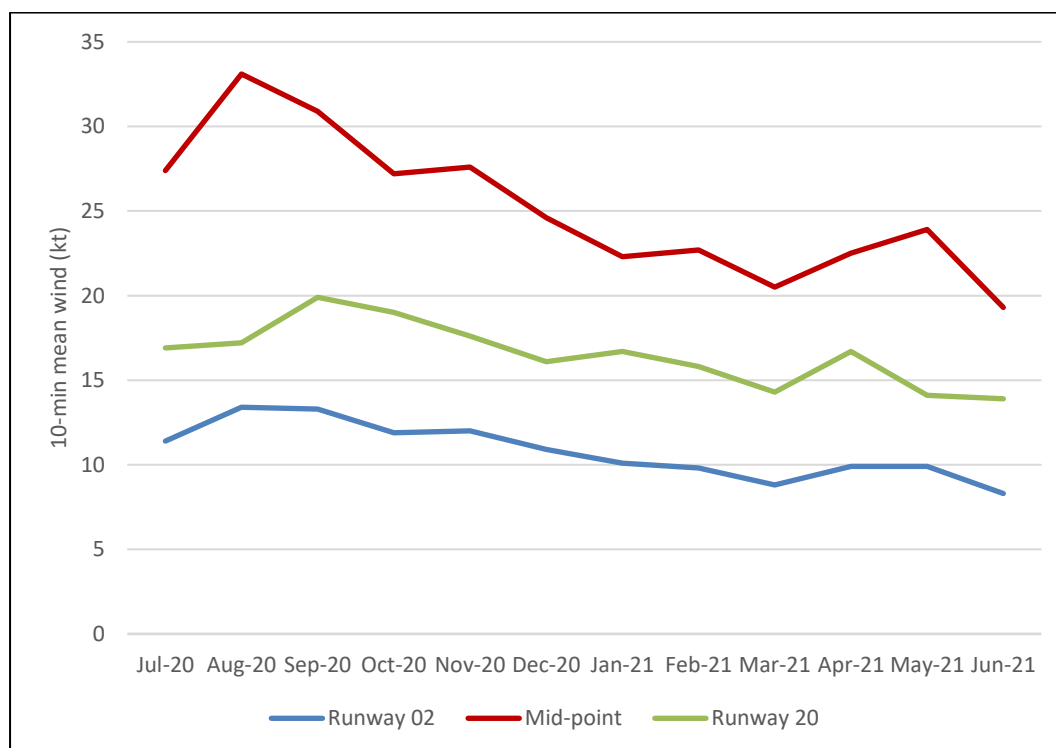


Figure 32: Monthly average 10-minute wind speed at monitoring points along the runway

There are few calm days, and very strong gusts of between 30 and 70 knots are common (Figure 33), with the highest sustained gust over 10 minutes recorded to date being 86 knots in August 2018. The strongest winds tend to occur in late winter (August-September or 'Scruffy August') and the third highest gust on record (82 knots) also occurred in August 2020. The average maximum gust speeds for the reporting period were 29.3 knots on Runway 02, 65.4 knots (Mid-point) and 56.9 knots on Runway 20 (Figure 33).

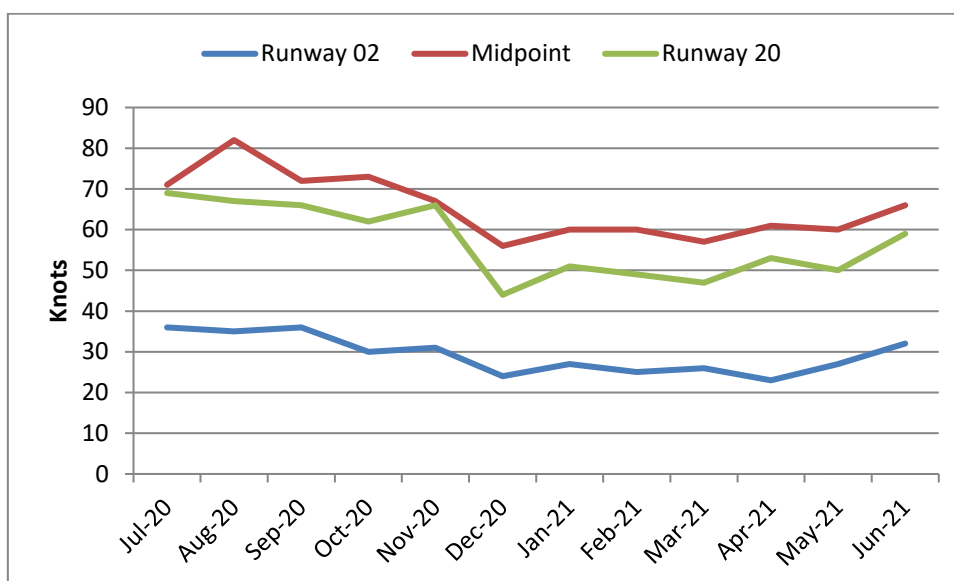


Figure 33: Maximum gust at monitoring points along the runway

Rainfall

The average annual rainfall at the Bottom Woods Met Station for the period 2001-20 is 514.6 mm, ranging from over 730 mm in 2008 to a low of 286 mm in 2019. In 2020, the annual rainfall was 549.8 mm, which exceeds the average, but the first half of 2021 was much drier, experiencing about 100 mm less than for the same period in the previous year (Figure 34).

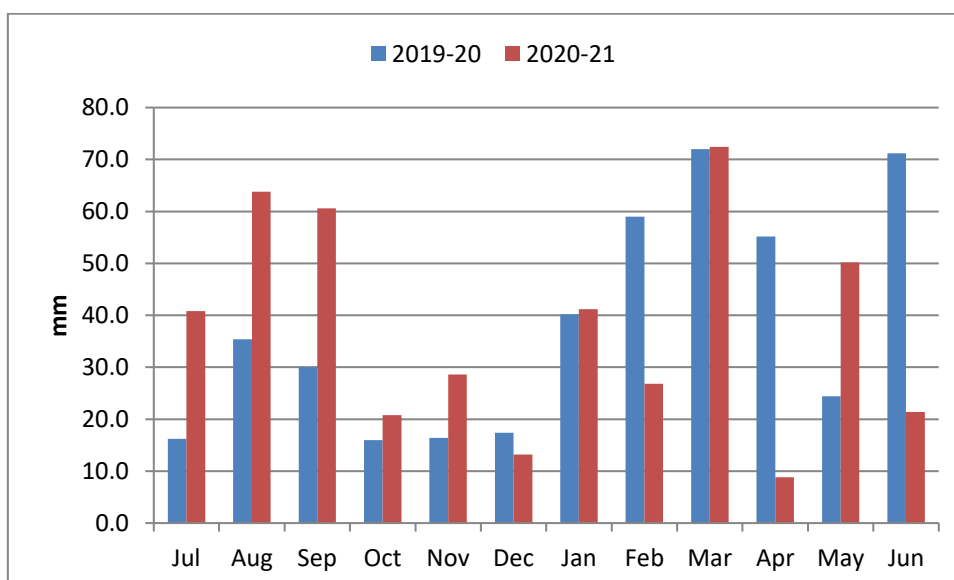


Figure 34: Monthly rainfall at the Bottom Woods Met Station 2020-21

By contrast, the average annual rainfall at the airport precinct over the 4-year period of record is about half of the Bottom Woods total at 263 mm (Figure 35). The annual rainfall at the precinct in 2020 was 256 mm which is close to the average, but the first half of 2021 was also much drier than usual (Figure 35).

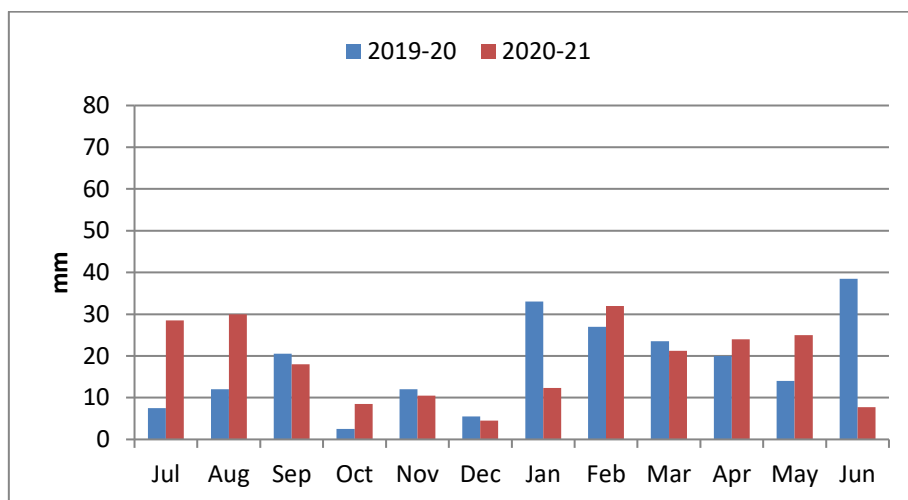


Figure 35: Monthly rainfall at the Airport precinct 2020-21

The monthly rainfall pattern shows a distinct difference between the drier spring and summer months (October to January) and the wetter autumn and winter months (Figure 36). However, there is a noticeable decrease in rainfall over the past four years as seen in the trend line in Figure 36. The period of record is too short to determine if this is due to climate change or part of a natural cycle.

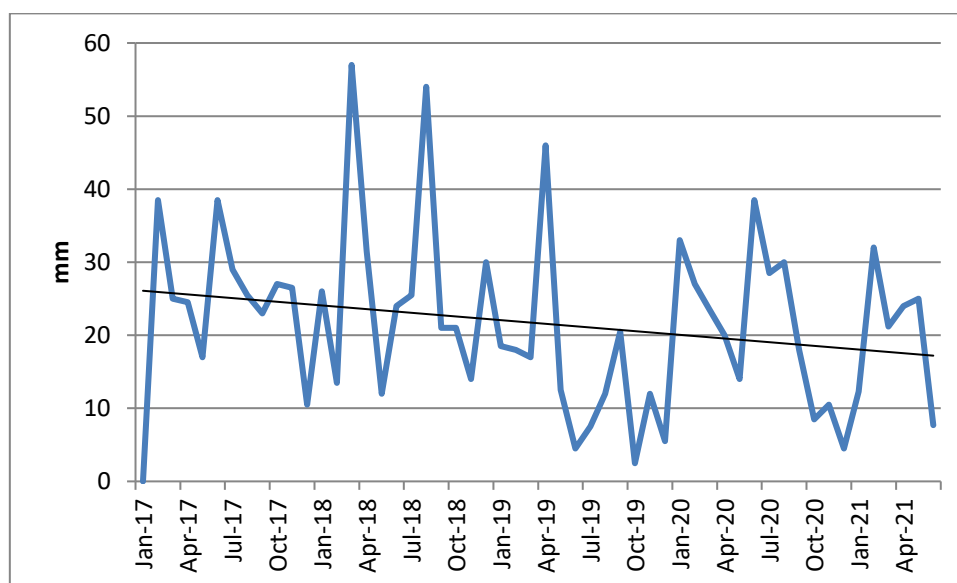


Figure 36: Mean monthly rainfall at Airport precinct 2017-21

Temperature

The mean annual temperature at the Bottom Woods Met Station is 18°C for the period 2001-21, and usually ranges between 17.5 and 18.5°C. The mean annual temperature for 2021 was exactly 18°C, matching the long-term average, and much lower than in 2019 (Figure 37). However, the first half of 2021 has been hotter than normal, as shown in Figure 38. Usually, the mean monthly average temperature peaks in summer at around 19.5 - 20°C, but mean temperatures for the first 6 months ranged between 19 - 22°C. Conversely, the average minimum temperatures during winter have been slightly lower than normal (Figure 38).

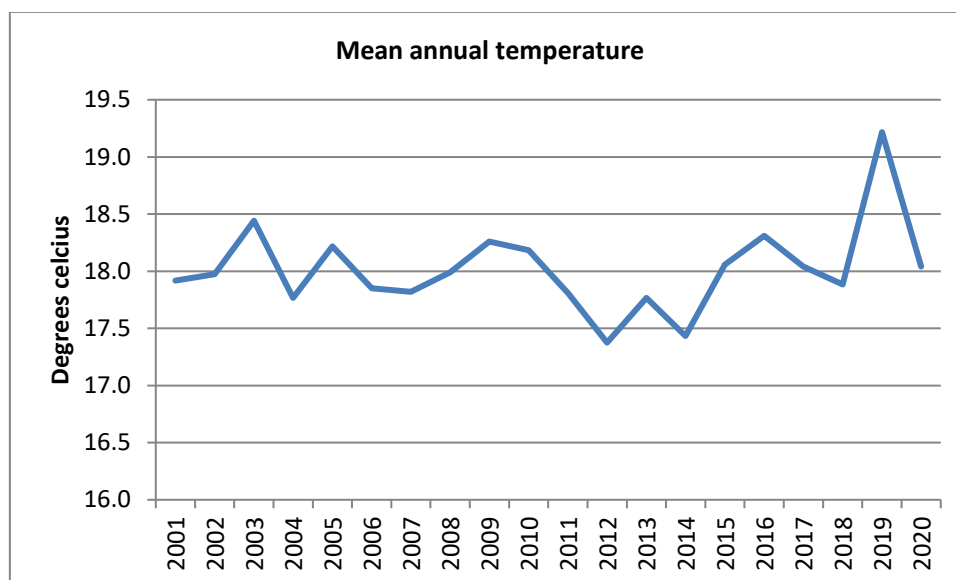


Figure 37: Mean annual temperature at the Bottom Woods Met Station

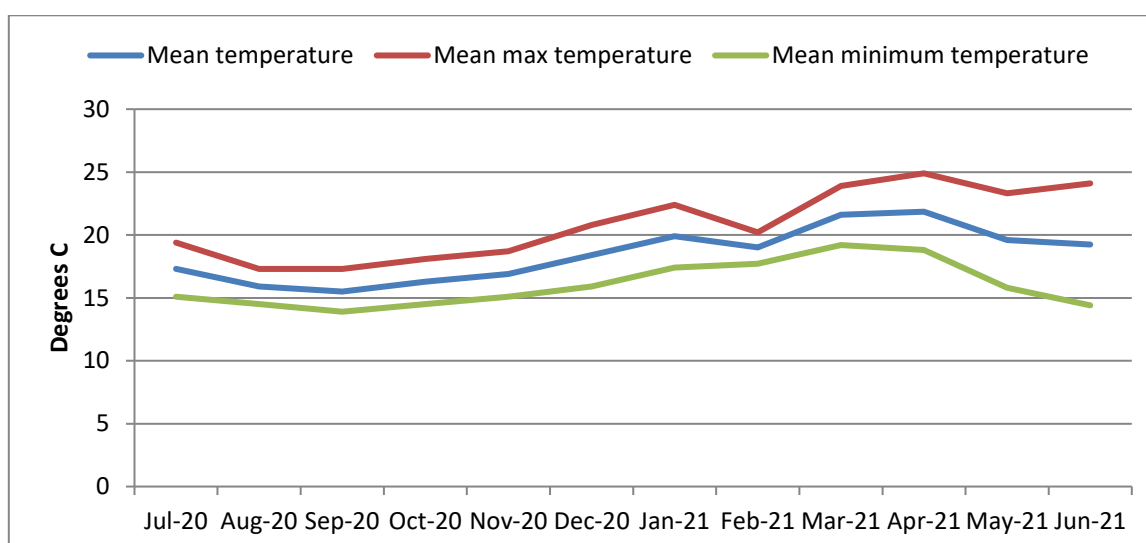


Figure 38: Average monthly temperatures at Bottom Woods Met Station

Sunshine

For its location in the sub-tropics, St Helena experiences a considerable amount of cloud, reducing the amount of sunshine to around 32-36% of the theoretical maximum, with an average 1,418 hours of sunshine per year. The total for 2019 was the second highest amount of sunshine since 2001, but there was much less sunshine than normal in 2020, with only 1,301 hours (Figure 39). However, the first half of 2021 has seen more sun than usual, reflecting the hotter and drier weather for this period described above (Figure 40).

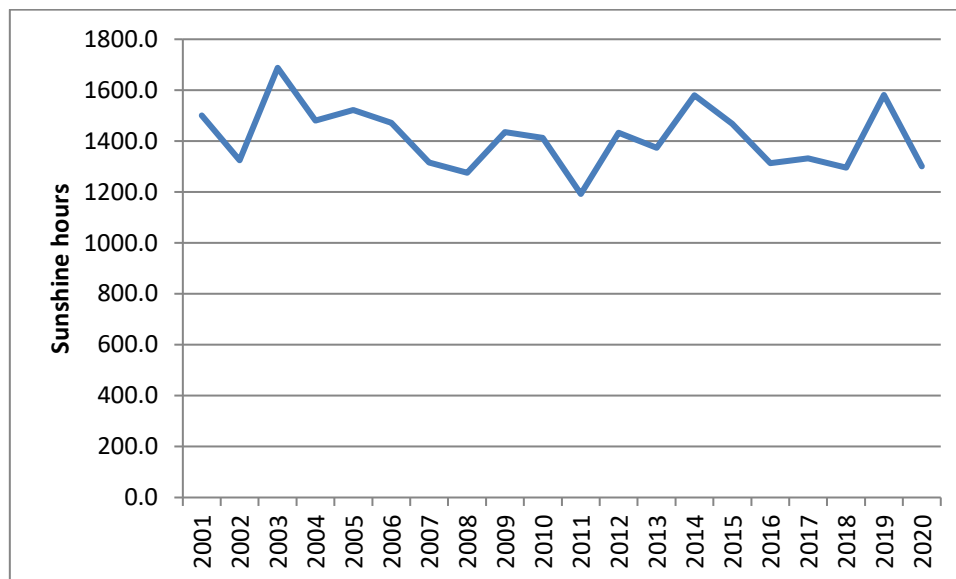


Figure 39: Annual total hours of sunshine at Bottom Woods Met Station 2001-20

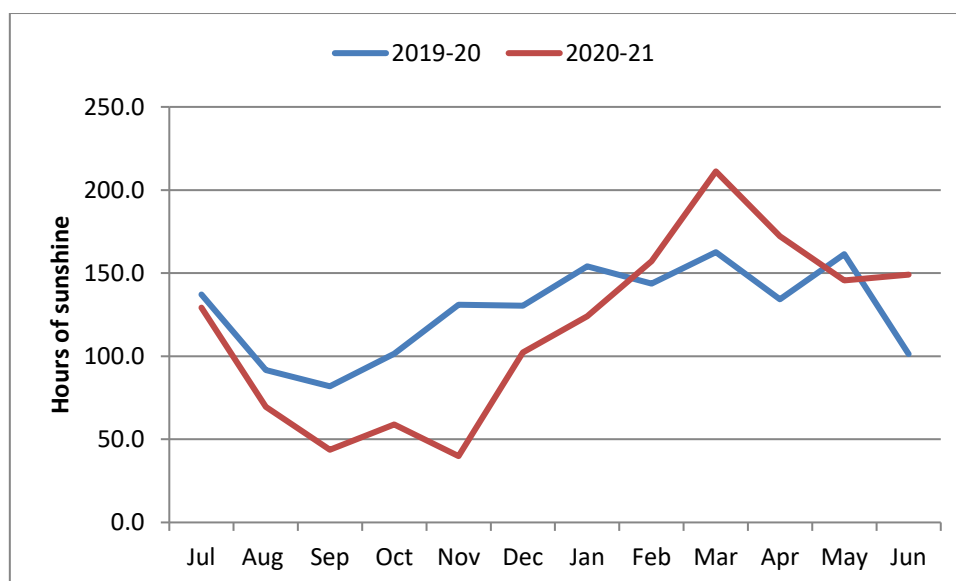


Figure 40: Average hours of sunshine per month at the Bottom Woods Met Station

8 CONCLUSIONS

The Covid-19 pandemic has been a constant undercurrent throughout the reporting period, providing the context for all activities at the Airport. This has created numerous challenges, but also some opportunities. The challenges include the restrictions on the free-flow of visitors, specialists, auditors, medical patients and cargo (including parts, spares and equipment for the airport), but these difficulties have been overcome through initiative, dedication and good management. On the other hand, the cancellation of the scheduled Airlink flights has opened the door for larger, chartered aircraft to fly from the UK to St Helena (with a technical stop in Accra), which has provided invaluable experience to all Airport personnel. These flights also became a lifeline, bringing in Covid-19 vaccines and PPE. In

addition, the airport has hosted a number of medevacs, thus underlining its value for saving lives and linking St Helena to the world.

SHAL is also proud to have played a role in a number of community activities, from Beaver sleep-overs to marathon runners. Engaging with St Helena's youth provides children with a glimpse of future career paths, as well as a fun day out for all involved.

From an environmental perspective, water issues (supply and quality) dominate the headlines, but unfortunately, satisfactory resolution of these issues depends on third parties. Meanwhile SHAL tries to manage the situation as best it can to ensure that there is sufficient water of good enough quality for drinking, firefighting, plant irrigation and all other uses at the Airport. Aside from the ongoing water issues, environmental management continues to improve and for the first time, there were no major findings in the external audit conducted in August 2021.

Wirebird numbers continue to increase and pest and predator numbers are declining due to the proactive controls in place. No invasive alien invertebrates have been detected and invasive plant numbers continue to decrease. While the overall drop in seabird numbers is to be welcomed in terms of aircraft safety, the significant drop in Fairy terns is worrying from an ecological perspective.

Finally, the achievement of Level 1 Airport Carbon Accreditation is one of the highlights of 2020-21.

Targets for 2021 - 22

- Regular scheduled flights to resume as soon as health and safety considerations allow;
- Annual audit in August 2022;
- EMS update in February/March 2022;
- WHMP update in February/March 2022;
- At least maintain Level 1 certification of the Carbon Accreditation Plan, and preferably obtain Level 2 certification;
- Quarterly risk assessment reviews;
- Proactive environmental management to prevent incidents from occurring;
- Regular water quality monitoring and analysis will be resumed;
- Improved compliance with the EMS and with the key performance indicators listed in the Executive Summary of this AER.