

**ASCENSION ISLAND
CONSERVATION NEWSLETTER
ISSUE 53: YEAR 2019-20**



**Ascension Island Government
Conservation & Fisheries Department**



We hope that this edition of our newsletter finds our readers safe and well! The first quarter of the year has been a busy time for us with the nesting Green turtles, spawning land crabs and the endemic plant census amongst other things! In the following articles, you can read more about all of this as well as updates on our MPA, seabird monitoring, biosecurity and public outreach events. Our work has been supported by volunteers and a number of our staff members have received training and support from overseas collaborators. We are very grateful to all those that support our work in many different ways.

ASCENSION ISLAND CONSERVATION & FISHERIES DEPARTMENT

In this edition you can read about:

Pgs. 1-2: The Ascension Island Marine Protected Area

Contributed by Dr Diane Baum

Pgs. 3-5: Marine and Fisheries Team Update

Contributed by Kate Chadwick

Pg. 6-7 Dances with Drones

Contributed by Daniel Sadd

Pgs. 8-9: Birds, Birds, Birds

Contributed by Laura Shearer

Pg. 10-11: Invasive Plant Control

Contributed by Sophie Tuppen

Pg. 12-13: Biosecurity

Contributed by Vicky Knight

Pg.14-15: Green Mountain

Contributed by Matt Stritch

Pg. 16-17: Ascension's Endemic Parsley Fern

Contributed by Jolene Sim

Pg. 18: Herbarium update

Contributed by Megan Benjamin

Pg. 19: Youth Training Programme with AIGFD

Contributed by Diego Williams

Pg. 20-21: Youth Training Programme with AIGFD

Contributed by Latisha Timm

Pgs. 22-23: Conservation Internship

Contributed by Lucie Machin, Will Wood, Matt Wall,
James McGurk & Jacqui Ellick

Pg. 24-28: Public Outreach 2019

Contributed by Natasha Timm



The Ascension Island Marine Protected Area

Contributed by Diane Baum

In August 2019 the Ascension Island Marine Protected Area (MPA) was designated. It covers the entirety of Ascension's 440,000km² Exclusive Economic Zone, which extends out to 200 nautical miles from the island. The whole area will now be managed to protect the unique marine life found there.



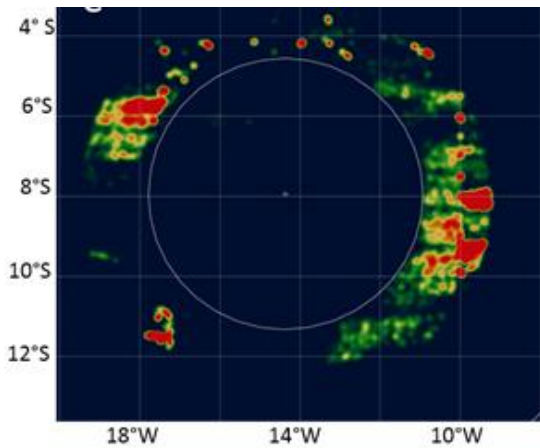
This is an immense achievement for a small island and means Ascension will join famous sites such as the Great Barrier Reef in Australia and the Galapagos Islands in the Pacific. The approved bans on large commercial fishing boats and mineral extraction mean Ascension's MPA will become the eighth largest in the world to enjoy such a high level of protection.

The seas around Ascension are immensely rich in life and have global importance. The island is home to the Atlantic's largest breeding colony of tropical seabirds and second largest nesting population of green turtles. As well as the sheer abundance of life, Ascension also has species of fish, seabird, mollusc, shrimp and algae found nowhere else on earth. Their ancestors would have arrived on ocean currents, but become isolated in the shallow seas around Ascension and some have evolved into completely new species. This means our marine fauna is a unique mix of species normally found on the

east and west coasts of the Atlantic and some species found only on Ascension. There is quite simply nowhere else like this on earth and protecting it will benefit the whole planet.

Protecting it will also be a huge challenge and the focus of the work undertaken by the Conservation Directorate's Marine Team. Over the next year we will be developing an MPA Management Plan and strategies to address the threats of illegal commercial fishing, pollution and invasive species. We will also make sure that everyone living on Ascension is consulted on the plans and kept informed of the work being undertaken to protect the MPA.

It is going to be difficult to monitor what is going on many miles from the island, but this is a challenge common to other large MPAs and an opportunity to share knowledge and experience. We will be working with colleagues at the Marine Management Organisation in the UK and using the latest satellite technology to detect illegal activity in the open ocean. This is still an emerging field and we want Ascension to be part of trialling new ways to track illegal behaviour and enforce regulations. We will also work with colleagues in other large MPAs around the world to develop techniques for monitoring our biodiversity and the threats it faces.



Map of commercial fishing activity in 2017 around what is now the Ascension MPA (shown by the blue circle). Produced from satellite detections of vessels.

The Marine Team and the technical assistance they receive from Cefas and the Marine Maritime Organisation in the UK are funded through the UK Government's Blue Belt Programme. The Blue Marine Foundation has also continued to support the Ascension MPA by funding equipment for the team and community projects on the island.

There are also threats closer to the island and, while Ascension's coastal waters don't experience the same pressures as many more populated parts of the world, we will also be looking to protect the inshore areas around the island from the risks posed by pollution, development and the introduction of non-native species. This is in addition to the work being undertaken by the Inshore Fisheries Advisory Committee to look at management of the local fishery. However, protection doesn't mean the ocean can't continue to be used; our MPA is not an exclusion zone. The sea surrounds Ascension and people have always looked to it to supply food and enjoyment. As long as these activities are sustainable and not carried out to excess, then they are completely compatible with the aims of the MPA.

Another important focus for the Marine Team will be making sure that the MPA and the work being undertaken is shared and valued by the global public. Our motto is 'small island, big vision' because, although Ascension is small, through the MPA we have the opportunity to be world leaders in ocean conservation. This will hopefully be a source of pride and potentially a source of financial and political support for people living here.



Marine & Fisheries Team Update

Contributed by Kate Chadwick



It has been a year of change for the Marine & Fisheries Team with the departure of Andy Richardson, the long standing department Team Leader and the designation of our Marine Protected Area (MPA) in the summer.

As always the main focus of our inshore work is to ensure the sustainable management of our fish populations and better understand the biology and ecology of keystone species. This includes, but is not limited to, tuna, wahoo, grouper and eels as well as some of our endemics. If we understand their vulnerabilities we can hopefully guard against any negative impacts and ensure this precious resource continues to be enjoyed by all.

The first quarter saw our last research and patrol cruise aboard the Extractor, where we conducted satellite tagging of large pelagics including sharks and wahoo, collected biological samples & oceanographic data that will continue to feed into the management of our MPA and patrolled for any unregulated or illegal fishing. The satellite tags allow us to look at the long range movements of these ocean going species and how they continue to utilise our newly-designated MPA. The biological samples were taken for isotopic analysis to better understand the trophic level at which certain species feed and for genetic studies assessing the likelihood of discrete populations being present in our MPA. The cruises were only possible thanks to funding and support from the Blue Belt Programme and the Darwin Plus ASIOS project.

During these cruises we also recovered our hydrophones from the depths surrounding our three seamounts. The hydrophones were sitting in at least 100m of water making it impossible to retrieve them by SCUBA. As such we had them moored using an acoustic release system and retrieval involved deploying a small transponding hydrophone from the boat that sends out a signal to each hydrophone mooring causing the acoustic release to activate, sending each hydrophone to the surface attached to a buoy. Always a tense moment! The hydrophones pick up signals from animals that have been acoustically tagged in the area and data can be used to look at site residency for large pelagics such as tuna and various shark species.

Again we would like to express our thanks to all the Extractor crew that have worked with us over the years, making each trip possible.

The team were also lucky enough to have a number of visiting scientists with us this year. These have included Paul Whomersley from the Centre for Environment, Fisheries and Aquaculture Science who joined us on a leg of the cruise and provide advice and guidance to the team regarding inshore research. Patricia Oristanio and Daniel Abate from the University of Sao Paulo spent a month here collecting mollusc specimens for taxonomic identification back in Brazil and we look forward to reading their research once published. Finally we had Danielle Orrell (Dani) over from the University Of Windsor, Canada conducting initial field work relating to her PhD looking at the movement and behaviour of inshore fish species.



Deployment of high residency hydrophones for range testing

As a team we installed a 23 point hydrophone array toward Two Hook and tagged both rockhind grouper and yellow spotted moray with internal acoustic tags, during several fishing trips. These tags interact with the hydrophones sending an acoustic signal or 'ping' that is unique to that fish enabling us to look at the degree of residency each species exhibits and the metabolic costs of living and hunting in our inshore waters for each species. We are due to dive this site in the coming weeks to collect the hydrophones for download and redeployment for another 6 months. Data will be passed to Dani for analysis and we are expecting her back in April this year to continue with this project and deploy more hydrophones around the island to answer further question surrounding the movement and behaviour of these two species. It has long been suggested that the Southern part of the island that remains relatively un-fished 'restocks' the fished side of the island and that grouper make full use of our coastal waters. However some studies show a relatively high level of site fidelity or loyalty and it may be this level of movement is not actually observed. If this is the case then more care may need to be taken with respect to the levels of fishing that occur along the north west coast of the island to ensure stocks remain stable. This could also have consequences if a large pollution or climate

event took place along this section of coast line and decimated this fished population.

The team have also conducted annual grouper surveys and a small study into the site fidelity and behaviour of the three most abundant species of moray found around Ascension. These are the yellow spotted, white spotted and broadband eel species. Dens (the sites moray occupy during rest or predator evasion) were tagged to look at the degree of residency expressed by these individuals and also record behaviours such as swimming, hunting, feeding and any mutualism, commensalism (an interaction where one species benefits and the other is unaffected) or social interaction with other species.



Dive survey site for the moray eel den fidelity & behaviour study

We are part of the Inshore Fisheries Advisory Committee (IFAC), a group mainly made up of local fishermen that has continued its work this year developing proposals for an effective system of management for our inshore waters. The IFAC has been discussing how we can best protect this vital resource whilst allowing fishing to be enjoyed sustainably, for years to come and that the island community benefits from this. The hope is that we will use data collected by fishermen in log books provided for free by the Conservation Department combined with the monitoring we carry out to apply appropriate

management tools should the data indicate an issue. This will be a form of adaptive management where the rigorous combination of management, research, and monitoring occurs, so that credible information is gained and management activities can be modified by experience. Public consultation meetings on this topic will be taking place in 2020 to ensure all ideas and points of view are heard.

As part of the IFAC we have secured funding from Blue Marine that will enable us to provide free log books to everyone that fishes on Ascension and contribute to improved facilities for fishermen at the pier as part of the wider refurbishment of the area.

Moving forward we will be working on further honing the MPA management plan and developing a research and monitoring strategy focusing on both the inshore and offshore, that will enable us to gauge the success & effectiveness of our 100% MPA.

We are interested in taking shark sighting data from anyone that makes visual contact. Ideally we need location, date, time of day, size and species if possible.

The team would also like to take the opportunity to thank the volunteers that have helped out this year with the inshore work. Kirsty Jones, Richie Joshua, Eugene Bennett and Jaco Ferreira

On behalf of the Marine and Fisheries Team I would like to wish you a happy & healthy 2020.



Dances with Drones

Contributed by Daniel Sadd, Marine Fisheries Scientist

The Drone!

In February 2019, the Conservation Department, Ascension Island Police Detachment and AIG operations purchased a drone with funding from the Conflict, Stability and Security Fund (CSSF).



The drone is manufactured by DJI and is a 'multi-rotor' Matrice 200 (M200) with 4 motors. It was chosen for several reasons, the main being; the square shape is less intimidating to seabirds, options to detach and add cameras, the long battery life and the ability to withstand strong winds. All important factors to consider for the work this drone will undertake on Ascension.

The M200 has a battery life of 38 minutes, can operate in winds of up to 26.8mph, has a top speed of 51.4mph, operates safely in temperatures as high as 45°C and has a maximum flight range of 4.3m (7km). As drones go, this is the cream of the crop. It has been tested sufficiently on the island and is currently flown by two individuals, both qualified to PfCO (Commercial Operations) standards. Lessons are planned for the conservation team early in to 2020.

Applications for the Island

The applications of the drone for conservation work and objectives are seemingly limitless. The drone will prove invaluable in time-saving

and resource-saving when carrying out a multitude of conservation tasks:

IUU Fishing Patrols – The M200 would be a welcome addition to annual patrols for the protection of the island's newly designated MPA. While the drone cannot fly out to sea to the MPA boundary, with a top speed of 51.4mph it can be deployed from a patrol vessel to catch and film any illegal commercial fishing operations that may occur. When it comes to IUU commercial fishing, quality evidence gathering proves tough. Having a video of vessels with exposed fishing gear within our EEZ would be huge in terms of quality evidence and as a deterrent for other commercial fishing vessels.

Beach Profiling – Ascension boasts very dynamic beaches, and while it is fascinating to see how quickly the beach can change with rough seas, it does pose a problem for nesting Green Turtles; especially if there is a long term trend of reducing the width of Long Beach, for example. Regular beach profile



surveys would allow us to highlight seasonal trends and monitor any long term trends in beach length/width, allowing for mitigation measures before they turn serious.

Invasive Plant Surveys – As you will no doubt be aware, Ascension has issues with several species of invasive plant. Love it or hate it, Mexican Thorn, *Prosopis juliflora*, is an invasive species and not just on Ascension.

While it does provide a much-needed influx of colour on the island it does pose a significant fire risk as it spreads to more 'habituated' areas, as well as providing extra shelter and burrowing spots for rats to spread across the island.



This is bad news for juvenile seabirds and land crabs. It is notoriously difficult to remove as it can grow from the roots and its seeds can be dispersed by donkeys, wind and anytime one is cut down.

A less well known invasive to the island is the Bermudan Juniper (our Christmas trees each year), *Juniperus bermudiana*, this spreads considerably within the boundaries of Green Mountain and poses a significant risk to the endemic plant species of Ascension.

The drone will help map, and monitor the spread of invasive plants, which in turn will inform conservation on the best methods possible to slow, and/or reverse the spread as much as possible.

Snot-bot – The name may not sound appealing but the premise and applications are exciting. Cetaceans (Whales and Dolphins)



are air breathing mammals, and when they surface to breath out, mucus and bacteria are expelled as well. This can tell us a lot about

the health of the ocean and the health of the cetacean including; stress indicators, DNA and the presence of pregnancy hormones. This is a non-invasive and cost effective method for collecting invaluable biological data, and with relatively few additions, our drone can be adapted to collect this information for Ascension. While no current collaborations are in place with Snot-bot it is an exciting application for the future of science on Ascension.

Seabird Nesting Rates – The numbers of seabirds on Ascension have increased exponentially since 2012, when just two nesting frigate pairs were observed on letterbox peninsular. This sharp rise in the number of nesting seabirds as well as the inaccessible nature of nesting sites has introduced complications when collecting



abundance data and chick abandonment rates for each species for each nesting season. The drone will help to reduce the work hours needed

to complete these tasks by surveying a large area in a short space of time. The M200 can be used to map colonies and nesting sites, count breeding pairs and count number of chicks and yet-to-be hatched eggs with the help of its thermal camera and 5am starts!

As well as a plethora of applications for conservation work, the drone is also important for island development and health and safety. The drone has the ability to drastically reduce the time and resources needed to conduct building and structural integrity surveys for the island. Not only that, but the thermal camera has huge implications for search and recovery of missing persons on the island, especially at night. The purchase of the drone and its accessories has been, and will continue to be very useful to the island community and the quest for knowledge!



Birds, Birds, Birds!

Contributed by Laura Shearer, Seabird Scientist

Ascension Frigatebird (*Fregata aquila*)

The Ascension frigatebird recolonised the Ascension mainland in 2012 following a successful eradication of feral cats in 2004. Since then, the population continues to rise on the Letterbox peninsula on the eastern side of the island.

In 2019, a population census was completed of the whole peninsula during the peak incubation period. A total of 1493 nesting attempts were recorded.



An Ascension frigatebird chick being scanned as part of the microchipping process. PIT tags will provide an insight to the ecology of this species.

Following a pilot study in 2018-2019, the seabird team have been PIT tagging frigatebirds with a unique microchip (similar to those used in cats and dogs). Weighing 0.09grams, around the size of a grain of rice, the microchip is placed between the shoulder blades of frigatebird chicks. Using a specialised scanner, individuals can be identified by the unique 9 digit number attached to each chip. Over time, it is hoped these microchips will provide an insight to the life cycle of this endemic species including lifespan, sexual maturity age and site fidelity.

A juvenile leucistic frigatebird was seen on several occasions around Ariane- Letterbox in May-July. Leucistic animals have a partial loss of pigmentation in the skin, hair, feathers or scales but retain the natural pigment of the eyes unlike albino animals. This is the first time leucism has been documented in this species.



Leucistic frigatebird spotted offshore

Masked Booby (*Sula dactylatra*)

A population census of nesting masked boobies was performed in late December during their peak incubation. A total of 1296 apparently occupied nests were recorded across the Letterbox peninsula.



In 2019, there was a renewed focus on marking each fledgling masked booby on the Letterbox peninsula with a British Trust for Ornithology (BTO) metal ring and plastic coloured ring. The colour ring can be easily read from a distance using binoculars or a telescope. Colour ringed juvenile masked boobies from St Helena have been recorded on Ascension; however this has not been documented the other way round. Over one hundred masked boobies have been colour ringed on Ascension so far.

Colour rings have been used on masked boobies on Ascension for 5 years. A01 and A03 were ringed as a breeding pair when the project began and in 2019 they were noted to be nesting in the same location for the fifth year running.

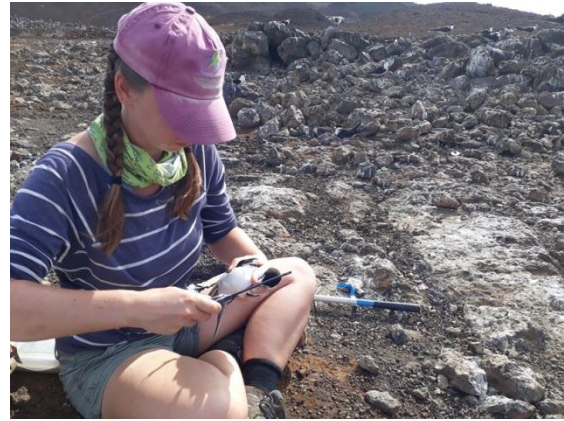
Sooty Terns (*Onychoprion fuscatus*)

The 2018-2019 sooty tern breeding season continued the downward trend of productivity for this species. The colony is split between two areas of the island – Mars Bay and Waterside. The colony at Mars Bay fledged an estimated 9-10,000 chicks while no chicks fledged from Waterside. Ascension holds a regionally important population of sooty terns with an estimated colony of 250,000 pairs.

The 2019-2020 breeding season has gotten off to a slow start with small colonies of several hundred birds laying but abandoning a few weeks later. Approximately 300 birds have nested in the lava flow on the letterbox path to Shelley Beach. The path was consequently shut to the public during this nesting period.

Ringed of sooty terns on Ascension Island dates back to the 1970's and was originally performed by the Army Ornithological Society (AOS). In 2019, several birds were recaptured at Mars Bay which were older than 20 years. The oldest recaptured bird was ringed as a

breeding adult 24 years and 9 months previously. Sooty terns are not sexually mature until approximately 6 years of age making this particular bird a whopping 30+ years old!



Biometric data of sooty terns is collected during the ringing process

Vagrant birds of Ascension

Several vagrant birds arrived on Ascension in 2019 including a juvenile purple gallinule (*Porphyrio martinica*), several waders, a swift and shearwater spp. as well as an immature squacco heron (*Ardeola ralloides*).



Purple gallinule (top) and Squacco heron (bottom)



Invasive Plant Control

Contributed by Sophie Tuppen, Conservation Fieldworker

Echo Canyon

Casuarina trees are cleared from the Echo Canyon site as the carpet of needles that they drop inhibits the growth of the endemic *Euphorbia*. Following last year's complete clearance of *Casuarina* trees at this site, we are pleased to report that there was minimal regrowth a year later. In Sept 2019, 19 *Casuarina* seedlings were uprooted, and 1 tree had regrowth out of the 354 cut *Casuarina* trees. The remaining *Casuarina* trees were confirmed to have died. This is excellent news for the site, and means that an annual site visit is now adequate to maintain the clearance zone, which had taken several years to clear. This really shows how important prevention and maintenance is when it comes to efficient invasive species management.



Part of the Echo Canyon clearance site. Trees in the foreground are outside the upper boundary and indicate the previous tree density

Letterbox

Letterbox peninsula is a protected area and important site for many of Ascension's native seabirds, including the endemic frigatebird. We are fortunate that clearance efforts began while plants were colonising the valley above the peninsula, which gives us a large buffer to

conduct clearance in before it becomes a threat to the nesting seabirds.

Of the 74 invasive plants removed from this site in 2018, we had 12 individual guava plants regrowth and a handful of *Nicotiana* seedlings in 2019. While this site needs to be carefully monitored for regrowth, clearance efforts are successfully preventing plants from reaching the peninsula.

Mars Bay and Waterside

Waterside and Mars Bay are both protected areas that encompass important sooty tern, *Onychoprion fuscatus*, nesting colonies. Mexican thorn, *Prosopis juliflora*, is encroaching on these colonies at both sites. Left unchecked, this tree will cover the bare rock that the birds nest on in a thick impenetrable thicket. It also provides habitat, food and moisture to invasive rats. As the more important sooty tern nesting site, Mars Bay has been the focus of clearance for several years.



Very few invasive thorn trees remain at Mars Bay

In 2019, the clearance zone was expanded to cover the whole protected area. There were 167 tree visits at Mars Bay, 96 of these were

new trees that had not been cut or treated before. While the Mars Bay protected area is not completely cleared, the sooty tern colonies within the protected area are clear of thorn tree. The remaining trees are limited to the edge of the protected area.

With the threat of thorn trees alleviated in Mars Bay, more focus has shifted to Waterside, where 90 trees have been cleared in 2019. There are still hundreds of thorn trees within this protected area. This is a large clearance zone that will occupy clearance efforts for some time to come.

Volunteers

We’ve had numerous volunteers this past year. I’d like to thank the RAF, who have come out and shed blood sweat and tears on multiple occasions to help us remove many pesky thorn trees. I’d also like to thank the many other volunteers for their hard labour, whether they come every week or just once. I appreciate everyone’s contribution to protecting our native wildlife from invasive species.



RAF volunteers tackling thorn trees

Going forward

Clearance and monitoring of the current sites will continue. As we move forward into 2020, new sites around Green Mountain that are

important for endemic ferns will be added to the areas that are already maintained.



Watch this space



Biosecurity

Contributed by Vicky Knight, Terrestrial conservation officer, Biosecurity Officer and Reserves Warden

Ascension has already had its fair share of troublesome introduced species with more than 90% of the plants and at least 70% of the invertebrates now found on the island believed to have been introduced from elsewhere. Some of these include:

- Mexican thorn
- Centipedes
- Ants
- Termites
- Myna birds
- Mosquitos
- Scorpions
- Wasps
- Rats



In one way or another all of these examples have had a negative effect on Ascension’s economy or environment, from the costly fumigation and building repairs as a result of

termites and ants, to the predation of young land crabs by rats.

Unfortunately, these species are already here and without a significant amount of money and time the island is stuck with them and the on-going costs needed to control them.

However, there are other species that haven’t arrived yet that we would like to be kept out. What would Ascension be like if it had:

- Venomous spiders or snakes like the Black Widow and Puff Adder?
- Mosquitos that can transmit malaria or the zika virus?
- Fire or crazy ants around people’s homes?
- Lionfish destroying fish stocks?

What could be done about it? How much would it cost? Would human health be affected? Would the island’s natural environment be at risk?

Like all things, prevention is better than cure and this is where biosecurity comes in.

Biosecurity is border control for animals, plants and diseases. It means putting in place measures to prevent new species reaching Ascension and to detect them very quickly if they do sneak in.

Ascension is a remote island that is largely dependent on imports to satisfy the need for everything from fruit and vegetables through to building materials and machinery. Importing goods will always carry a risk of introducing new plants and animals to the island, so a balance must be struck between reducing that risk and allowing the goods the island needs to continue to arrive.

This problem is faced by many islands and Ascension is not the first to try to tackle this issue. Many people will be familiar with the controls in place on St Helena and anyone lucky enough to have travelled to New Zealand will have experienced their very thorough checks!

Since 2013 the Royal Society for the Protection of Birds (RSPB) has been supporting the AIG Conservation and Fisheries Directorate's work on invasive species and over the last year the AIG have been working with experts and other territories to develop a system that is suitable for Ascension. Through a project funded by the UK government's Darwin Plus programme, AIG staff were able to travel to St Helena and the UK to receive training and to experience their systems at work.

Thanks to the Tackling Invasive Non-Native Species in the Overseas Territories project, financed by the UK government Conflict Stability and Security Fund (CSSF), AIG staff were able to work with international experts to identify the highest risk species that could come to Ascension so that the island can be ready for them. The species identified that were of most concern were:

- **Red fire ants**, which can deliver extremely painful bites.
- **Mosquito** species that carry diseases.
- **Brown rat**, which is more aggressive than its black cousin.
- **Lionfish**, that can devastate fish stocks.



Above picture - Lionfish

On the 05 May 2020 the Ascension Island Council voted to recommend that new biosecurity legislation is put in place to help protect Ascension's economy, environment and human health from the introduction of plants and animals that are not native to Ascension.

Putting together the knowledge gained from training in other countries, consultation with people and companies on Ascension and trial inspections on imports, the AIG has developed a system that will reduce the risk of new species arriving, but also ensure there isn't any significant disruption to bringing in the goods and the people the island needs. This will be achieved by requiring that high risk goods coming into Ascension meet certain standards published on the AIG website, and through inspections of imports to detect any potential issues.

The legislation will come into force in July. In the meantime, AIG will be working hard to ensure importers and everyone living on the island understands the new controls.



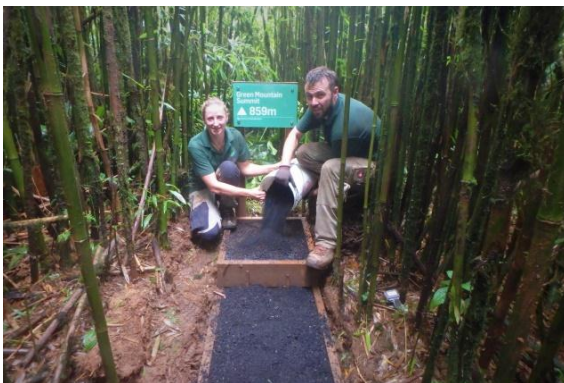
Green Mountain

Contributed by Matt Stritch, Assistant Park Warden

Dew Pond Completion: Undoubtedly the biggest milestone for Green Mountain over the last year has been the completion of the Dew Pond steps. The project began back in September 2017 but due to limitations such as staff numbers, staff turnover and injuries, the project took a while to complete. On the 7th April 2019 the steps were finally finished with the help of the local community. Made from a strong wooden frame, each step was cut and built in the field then filled with volcanic clinker. The step design allows repair work to be carried out using materials readily found on island.

One of the biggest challenges during the build was getting materials to site. With only two staff members in the Warden team, just filling the steps with clinker would have gone on indefinitely. To overcome this problem we came up with a plan which involved the local community.

Gathering 52 volunteers from across the island, we formed a human chain passing buckets all the way up to the Dew Pond summit, filling steps along the way.



Warden team Vicky Knight and Matt Stritch filling the final step

Once all the steps were filled the then administrator of Ascension Island, Steve Chandler, officially opened the steps with a ribbon cutting. He then very kindly invited us all back to the residency for a much deserved “thank you” curry and drinks.

A big thank you goes out to all that helped on the day, the MOD who helped transport materials up the mountain throughout the building process and Blue Marine foundation for funding the project.

Historic Buildings: A new scheme initiated up the mountain is rediscovering the lost heritage sites. With the help of volunteers many of the sites that had been engulfed by vegetation over the years have been uncovered. Rock, Olive and Barters cottage have all been cleared of vegetation as well as the old chicken coop at the marine barracks. Work has now begun on the old tennis courts on Rupert’s, North East Cottage and the water catchment. By removing the plants, root damage is reduced and the buildings are kept aired reducing dampness.



North East Cottage clearance work

Volunteers: Volunteers have become an integral part of the National Park team with a core group of volunteers coming out weekly to help us achieve a range of goals. As well as our weekly volunteer days, the MOD also helps us once a month. Volunteer tasks have been mainly focusing on uncovering the historic features on the mountain but we have also been carrying out path clearance and levelling work. We are always looking for more volunteers so please pop by the conservation office if you are interested in helping out.



Tennis courts on Rupert's before and after

Visitor Centres: The Red Lion is the central point of the Mountain with many paths branching from the area. There is already a car park, picnic area and public toilet in this area which will soon be added to with an indoor visitor centre. The lower floor of the Red Lion building has been cleaned out ready to be transformed. The main room is already filled with historic images and maps as well as large information posters on past conservation work. It will soon be open to the public to visit and will provide a dry warm place to wait out the rain. The room can also be used as a class room for school groups visiting the mountain.

Outside of the national park, work has begun on converting the beach hut on Longbeach into a visitor centre. A large 3D map of the island has been made, a mural of a turtle's lifecycle on Longbeach is being painted and a series of glass information boards have been put up. The outside is also being given a new lick of paint to brighten it up. A few finishing touches are still being made before it will officially be opened to the public.

A big thank you goes out to our generous funders, Blue Marine foundation and the Ascension Island Heritage Society.



Preview of the new signs



Ascension's Endemic Parsley Fern

Contributed by Jolene Sim, Conservation Team Leader & Endemic Plant Nursery Officer

The Ascension Island Parsley fern is a remarkable plant species. Most notably, this fern is endemic to Ascension and ranks as one of the top ten rarest of all known plants in the world! Once thought to be extinct, this diminutive species was rediscovered in 2009, hanging on to dear life and heavily under threat by introduced flora and fauna. Now only one known individual exists in the wild on Green Mountain. The IUCN classifies this species as Critically Endangered, given the precarious state of its existence. However, for many conservationists, it signifies proof that preservation efforts can successfully make a difference.



Following its rediscovery by Phil Lambdon, Stedson Stroud and Olivia Renshaw in 2009, spores were collected by local conservationists and exported to Kew gardens to carry out propagation trials to ensure the survival of this fern. Since then over 50 specimens have been cultivated and repatriated from Kew's In-Vitro Biology (IVB) unit to our lab. This was followed by a trial of restoration attempts. In particular, ten specimens were planted out in the wild in 2014 which resulted in the recruitment of 175 sporelings (young ferns). Unfortunately, with the encroachment of the invasive Maidenhair fern and a lack of prolonged heavy rainfall,

these micro habitats have become unsuitable for this fragile species to survive. During last year's endemic plant census, we found one Parsley fern remaining in the wild. The decline in numbers during the last few years gives cause for great concern.

With support from Blue Marine funds in 2018, the development of a micro-prop lab on Ascension Island has allowed us to maintain a conservation fail safe stock of this species in *ex-situ*. We currently hold a collection of over 50 Parsley fern gametophytes in the lab, and at the Green Mountain nurseries we have a living collection of approximately 10 of these ferns producing spore. However these collections are extremely vulnerable to mould, fungi and invasive pests such as aphids and scale insects. To help mitigate these threats the Conservation Team carries out regular monitoring and pest control. All of the fern material in *ex-situ* is from the original stock repatriated from Kew.



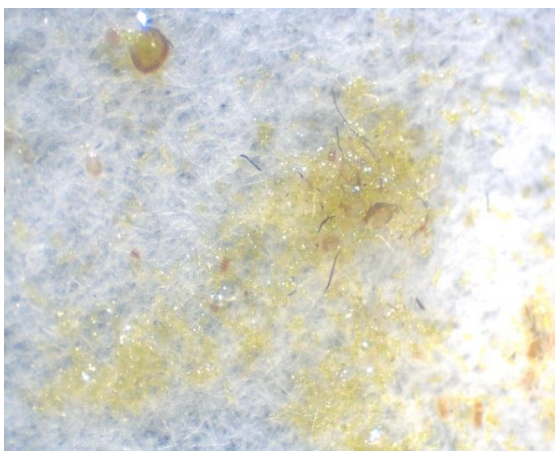
Now these plants are producing spore we have initiated propagation trials to try grow these ferns on Island for future restoration efforts. However, with time running out for this vulnerable plant, additional action was taken in April 2019 to collect spore from the nursery collections which were sent to Kew's

IVB unit for culturing. A second batch was also sent to Kew in July 2019.



Phil Lambdon delivering the spores to Viswambaran Sarasan at Kew RBG

It is crucial for Parsley fern spores to be cultured within 48 hours after collection whilst they are still viable. This meant that the spores had to be collected and transported in a timely manner to arrive at Kew on time. Whilst there was some contamination, within two weeks Kew's lab technicians were able to successfully sterilise the spore from both batches and they are now successfully germinating in vitro.



Anogramma ascensionis spores on filter paper/agar



Jonathan Kendon (Lab Technician - In Vitro Biology) and Marcella Corcoran (UKOTs Programme Officer)

Special thanks to Jon Kendon for your expertise and dedication in helping us to save this species from extinction. Thank you also to Dr Colin Clubbe - Head of Conservation Science, Marcella Corcoran - UKOT's Programme Officer, Phil Lambdon and the Kew science team for your continuous support on this project.



Jars full of gametophytes and a few with sporophytes at Kew's IVB unit

Photo credits: M. Corcoran and J. Kendon, Kew and AIG Conservation Plant Team



Herbarium update

Contributed by Megan Benjamin

In March this year Phil Lambdon visited the Island to carry out research and collect photographs for the upcoming book *Flowering Plants and Ferns of Ascension Island*.



During his visit Phil also gave us photography training. This training enables us to take better images of flora for both the book and herbarium library. Over the last few months the plant team has been collecting more images for the book, at times this can be tedious as weather conditions are not always favorable or the plant may not be in flower.

Kew's herbarium is one of the largest in the world and around 25,000 specimens are added to their collection each year. In May I sent over 50 specimens to the Royal Botanic Gardens (RBG), Kew. Duplicate vouchers were made of each species so that one can be stored locally on the Island and the other at



Kew's herbarium. This acts as a research fail-safe in case of a natural disaster.

The majority of specimens will be digitised on the Botanical Research and Herbarium Management System (BRAHMS) UKOTS Online Herbarium and Phil is working on identifying some of the unknown specimens for processing at a later date. Digitising these specimens will allow anyone to access this information for research purposes.

I would like to take this opportunity to thank Phil Lambdon and Marcella Corcoran, RBG, Kew for your continuous support with the herbarium work.





Youth Training with the AIG Conservation & Fisheries Team *Contributed by Diego Williams*

Hi my name is Diego Williams; I am a Youth Trainee with the AIG Conservation and Fisheries Department and have just started my second year of the Youth Trainee Programme.



Seabird work at the Letterbox Peninsula is still a very physical challenge for me but I enjoy it. So far I have seen 10 out of 11 seabird species on the island. The

endemic Frigatebirds, Tropic's, Noddy's, Booby's and Terns are all very amazing birds. The main seabirds we monitor are the Frigatebirds, Booby's and Terns.

Invasive species clearance is another challenge for me but I enjoy it. The main invasive plant that we cut down is the Mexican thorn. We clear invasive plants from important conservation sites such as turtle nesting beaches, endemic plant areas and seabird nesting grounds. In August we had a team day up Sisters Peak. We went to cut down *Casuarina equisetifolia* because it is growing in one of the seed banks for the critically endangered Euphorbia plant. Sisters Peak is also an area of natural lava rocks and scoria, so removing the trees helps to keep its natural landscape.

Plant work involves a lot of walking, especially when going to water the wild populations of Euphorbia. There are Euphorbia restoration sites all over the island. In September of this year I helped the plant team with plant census. For the plant census they go to certain

places on the island and count the endemic plants left in the wild, this is done twice every year during the cold and hot seasons. I really like shade house days up the mountain, it is so interesting. We also do lab work like banking Euphorbia seeds, cleaning spores and so much more.

Park warden work on the mountain is very time consuming, especially path clearance.

Another thing we do with the park warden is biosecurity checks. There are traps where cargo is being off loaded on the island and we check them



every time a plane or ship is here. At the beginning of this year we started doing ant surveys to see what kind of ants we have here on the island.

Turtle work with the interns was very interesting. We were really busy during the 2019 peak season with raking tracks on Long Beach, NE and Pan Am. Sometimes we spend 4-5 hours a day doing turtle monitoring and rescuing stranded turtles. Another thing we do is nest excavation, this can be a really smelly job, but I can sometimes put up with the odour.

In April I did power boat training, it was a great experience. Youth training with AIG Conservation and Fisheries has really helped me to see that the island is a unique and special place. I cannot wait to see what the rest of my second year is like.



Youth Training with the AIG Conservation & Fisheries Team *Contributed by Latisha Timm*



My name is Latisha Timm and I have been living on Ascension for my whole life (16 years). I left school on

the 21st of July last year and I am now currently working with the Conservation and Fisheries Department via the AIG Youth Training Program. I started the program on the 2nd of September and so far it has been a wonderful start to the scheme. My first day was an induction day with Jolene Sim, the Conservation Team Leader followed by the health and safety briefing with risk assessments and material safety data sheets. I then spent the afternoon with Kate Chadwick from the marine team familiarising myself with the safety procedures in the wet lab and the equipment.

I've been assisting Vicky Knight and Matt Stritch, the Green Mountain National Park Wardens, usually on Mondays and Fridays with their work. I've assisted with clearing Elliot's path by cutting ginger and stinging nettles, ending with a tidy clearance using the leaf blower. I have also been helping Matt build a sign for Waterside as well as building 'do not enter', doors for some of the buildings up at Green Mountain for human safety, as some roofing and floors are slowly falling apart. I've also helped with restoring the heritage buildings around the mountain.

Tuesdays are spent surveying birds on the Letterbox Peninsula. I have assisted Laura Shearer and Sophie Tuppen, the Seabird Conservation Team, on monitoring the seabird sites. So far I've been out with them

recording data on both old and new Ascension Island Frigatebird nests. Recently most of the Conservation Team including Diane Baum, Laura Shearer, Sophie Tuppen, Matt Stritch, Natasha Timm, Diego Williams and I, along with Hugh, a volunteer, went out to Letterbox to do a population count of all the Frigatebird sites, known as the yearly census, locating new colonies along the way. We also kept a look out for other seabird nests such as Red and Yellow-bill tropicbirds, and masked and brown boobies. We have eleven seabird species nesting around the Island including, the Storm petrels, our endemic Ascension Island Frigatebird, black and brown Noddy's, Sooty terns, Fairy terns and Red-footed boobies.

I've also been assisting with the plant team, Jolene Sim, Natasha Timm and Megan Benjamin. On my first day out with the plant team we went to Mars Bay to carry out the annual plant census, counting and watering one of Ascension's endangered endemic plants, *Euphorbia origanoides*, also known as the Ascension spurge. The census is performed twice a year, in the hotter part of the year which is in March and the cooler time of the year which is in September. Every Wednesday we water the *Euphorbia* plant sites at Mars Bay, Hummock Point and Comfortless Cove area as well as Letterbox. I've also been out to Little White Horse Hill to repair fencing around the rare plant *Euphorbia origanoides* sites, preventing predation from pests and feral sheep. We check Two Boats Shade House for pests such as mealy and scales which are tiny insects that predate on the *Euphorbia* plants. The *Euphorbia* is not only endangered by insects such as mealy, but also by prolonged periods of dry weather as they tend to dry up and die.

So it's our job to water the sites to try and sustain the populations and re-populate the numbers of *Euphorbia* with this living seed bank, as the numbers are dropping rapidly. The Shade Houses at Green Mountain are also checked, watered and weeded if needed and potting on of plants. I went to Echo Canyon recently to assist with more of the endemic plant census of the *Euphorbia*. This area is very beautiful in its own way. In the dry lab I have worked with both Megan and Natasha doing In-vitro propagation. We sterilize spores from of the endemic ferns such as the *Ptisana purpurascens*, giving them a better chance of growing, meaning they don't get contaminated by bacteria or fungus.

Diego Williams, another youth trainee, and I have taken the responsibility of capturing and looking after ladybugs called *Cryptolaemus montrouzieri* inside of a vivarium. We are doing this because these particular ladybugs tend to eat the mealy bugs that infest the *Euphorbias*, which would then hopefully increase the chances of the *Euphorbia's* survival. Once we have gathered enough, we will release them into the shade house at Two Boats Shade Houses. So far our project is going well and we have had a few reproducing.

On Thursdays I've been assisting Sophie with invasive species removal. On this project I've been to the Long Beach Hut checking for re-growth of *Prosopis juliflora* also known as Mexican thorn, this was followed by cutting and poisoning using an herbicide called Garlon. We did this to prevent green turtle hatchlings from getting tangled up in the roots. I have also been out to Mars Bay and Waterside where we checked for Mexican thorn regrowth, while cutting and poisoning. This is to prevent the spread of Mexican thorn to the sooty tern nesting areas, which would then increase rodents. During these times I've also gotten a chance to use a reciprocating

saw, which I found quite interesting but I'd still choose handsaws over it. We've also been out to Echo Canyon to do some invasive clearance of the Australian pine tree *Casuarina equisetifolia*, as the *Euphorbia* cannot grow through a carpet of pine needles.

I have been working with the Environmental Health Team, where I have assisted Nathan Fowler. We did some rodent control, which includes refilling and checking rat boxes around the Island. For my first time doing rodent control I crouched down and opened a rat box and a rat jumped out of the box and ran towards my feet, what a surprise that was! I have also assisted Nathan with cleaning and maintenance of the Two Boats swimming pool using the equipment called the dolphin and testing the chlorine and pH levels to see if the water was safe for public use. Another task was to check the water quality at Green Mountain (Red Lion and Residency) to see if the water was good for use.

Throughout my time spent working with Conservation so far, I have worked with volunteers, my youth trainee partner Diego and everyone from the Conservation Team. Everyone is very friendly in this working environment and I am grateful to the Conservation and Fisheries Department for letting me join them as a youth trainee. I have enjoyed my time working with them so far and I look forward to the rest of the coming year!



BLUE MARINE
FOUNDATION



Conservation Internship *Contributed by* *Will Wood, James McGurk, Lucie Machin & Matt Wall*

This year sees the internship programme expanded to three longer conservation internships as well as one six-month turtle internship. Interns will continue monitoring green turtles, but will also help across the range of duties of the Conservation Department. Jobs the interns have done so far include: maintaining Green Mountain National Park; redecorating Long Beach's beach hut; clearing invasive vegetation; helping monitor and care for the island's endemic plants; and assisting research on the land crabs and seabirds.



James, from Cumbria, completed a Biological Sciences MBiol at the University of Durham, focusing on environmental change and writing a thesis on plant invasion biology. He worked as a Trainee Ranger in Northumberland National Park and in Devon, before spending last year wildlife guiding in the Hebrides. After completing his internship, he hopes to work as a National Park Ranger.

Lucie, from Berkshire, completed a BSc in Geography at the University of Bristol, before studying an MSc in Conservation and Biodiversity at the University of Exeter, where her thesis focused on mapping illegal fishing. She has worked in conservation and sustainable agriculture, working most recently

as a Marine Conservation Research Assistant at the University of Exeter. After her internship, she hopes to continue to work in conservation or move into environmental filmmaking.

Matt, from Surrey, completed his BSc in Zoology at the University of Exeter. Before coming to Ascension, he worked with Green and Loggerhead Turtles in Northern Cyprus. Matt's dream job is to be a wildlife cameraman. He hopes to share the wildlife of Ascension and the incredible conservation work undertaken here through photography and film. After his internship, Matt will be undertaking an MSc in Marine Vertebrate Ecology and Conservation back at the University of Exeter.

Will, from Derbyshire, completed a BSc in Zoology at the University of Sheffield before taking an MRes in Ecology at the University of Glasgow. He then went on to a Land Management Traineeship with Derbyshire Wildlife Trust. After his time on the island Will would like to continue to work with wildlife, either in a research or ranger capacity.

As the turtle season kicks off, the intern team are working with, and being supervised by, Jacqui Ellick (the Turtle Queen) to monitor turtle numbers and nests on Long Beach, North East Bay and Pan Am. So far it has been one of the best seasons yet for the turtles, with 288 turtles emerging onto Long Beach in one night and peak nesting season still ahead. As usual, the intern team are also running turtle tours on Monday nights, giving residents and visitors the chance to watch turtles nesting.



Public Outreach 2019

Contributed by Natasha Timm, Conservation Assistant

This year the Conservation department hosted a number of successful events including tours, the Explorers youth club during the holidays and the annual beach clean. During these occasions we highlighted the importance of our unique biodiversity and how we can all work together to conserve our natural heritage.

Ascension Explorers 2019

This year the Explorers Club started with a hike to Dampier’s Drip, a historical water catchment site. Along the trail the young explorers stopped to identify the different



plant life and classify whether they were introduced or native. They also learnt about the history of the path and how the water drip was Captain Dampier’s main water supply.

Week two of Ascension Explorers was spent up at Green Mountain with the Park Wardens, learning about Land crabs. The activity started with everyone eager to go and get crabbing!

The Park Wardens, Vicky and Matt, explained how they monitor land crab movements using PIT tags and scanners.

Taking on the role of the scientists, the Explorers trekked up to the water catchment area then back down again via Bishops path. Along the way they collected data from crab printouts that had been placed along the trail the day before. Each crab had to be sexed, tag number collected, carapace measured and location recorded. The explorers did a fantastic job and had fun learning about Ascension’s wonderful Land crabs.



After all the hard work collecting data, we finished the day off with games on the lawn.



The Ascension Explorers went on a walk to Weather Post on week three.



Despite the walk being long and strenuous they thoroughly enjoyed the views and were able to identify the flora and fauna along the way. Once they had reached their destination they had fun exploring the Weather Post area where they found the letterbox stamp, weather station and also guppies in the catchment.



On week four our Explorers did a marine day with marine scientist Kate Chadwick. They learned about marine ecosystems on both Ascension and around the world.

The kids started their morning with activity sheets, finding out about what ecosystems are, the different types and how they are important, not only to us as humans but to the planet as a whole. This included fresh water ecosystems such as lakes and rivers, marine systems such as reefs, mangroves and salt marches and terrestrial rainforests.

Ecosystems are important as the marine species they support provide ecosystem services such as provision of food, medicines and livelihoods. They also support recreational activities such as diving and fishing around the world. Our ocean contributes to our overall health and wellbeing to a certain extent and that is why it is important to look after it.

If we cannot prevent over fishing or introducing invasive species and reduce pollution with plastic and litter then we won't be able to look after our ecosystems and it will ultimately be us that suffer!



We then did a fun game of ocean bingo before heading down to the Turtle Ponds to explore and identify marine life. We found micro algae, *Neomeris annulata*, in the pools which are very slow growing and slightly calcified. A very interesting looking specimen!





The final event during the holidays was in the Green Mountain National Park where the Explorers learnt about Ascension’s natural and historical heritage.

They started the day with Jolene Sim, Conservation’s Team Leader, who talked to the Explorers about the different categories of plants, those being native, endemic, introduced and invasive. The kids were also given some facts about the history of the mountain that would later help them with their activity sheets.

During our walk to the Dewpond, Jolene taught the Explorers about the different endemic plants growing in the cloud forest. One of Ascension’s critically endangered ferns, *Stenogrammatis ascensionis*, locally known as the Moss fern, now mostly grows on these mossy bamboo and tree habitats near the summit. The Explorer’s learnt about the importance of protecting these habitats which are vital to the survival of our endangered endemics.



Following our hike to the Dewpond we had a snack at Garden Cottage and then played fun, educational games on the lawn. They had such good fun!



The day ended with a presentation to the Explorer teams and individual winners who did a fantastic job - Caitlyn Kewley, Zayla Henry and Riley Leo-Francis. A very big well done goes to all the Explorers!

We would also like to say thank you to Two Boats School, AIG Operations and all of the parents and volunteers supporting our Ascension Explorers Club 2019.

Annual Island-wide Beach Clean 2019

On Saturday 26th October the general public, employing organisations, and the Scouts, Guides, Brownies, Rainbows and their leaders of the island came together for the annual island-wide beach clean.

The beach clean is undertaken each year prior to the start of the turtle nesting season to ensure beaches are clear of litter, invasive plants, plastic and debris so that turtles have

the greatest chance possible of nesting successfully.



Volunteers from the public were spread out across the beaches in Georgetown including Long Beach, the largest turtle nesting beach on the island. The Conservation and Fisheries Department also worked with the AIB and USAFB to clear Turtle Shell, NE Bay and Pan Am and Springers beach.



Volunteers on Long beach and beach near the Pierhead



Top to bottom: USAF Base and RAF Base volunteers on Pan Am and Turtle Shell beaches

The Conservation and Fisheries Department would like to thank each and every one of the volunteers for their efforts. The clean-up was then followed by a thank you BBQ at the Turtle Ponds for all to enjoy!



Volunteers enjoying BBQ at the newly renovated Turtle Ponds funded by the Blue Marine Foundation

Ascension Day Fair 2019

The island’s annual Ascension Day Fair celebration was held on Saturday 1st June. The Ascension Island Government Conservation & Fisheries Department stall aimed to raise awareness of conservation issues with the public, with many of the activities based around the ocean and marine topics.

The kids joined in with making plant pots from recycled jars, creating ‘fishy’ mobiles and colouring posters for World Oceans Day (8th June). In addition to the crafts, there was also the chance to guess and match the tracks and routes of different animals tagged at Ascension Island, as well as displays and information of many Conservation projects. We’d like to thank all the children who participated so enthusiastically in these craft activities and games.



Thank you to the ADF committee for inviting us to join in with this annual event and to the public for your continuous support!

Conservation Tours

It was relatively quiet this year for tours; we were visited at the beginning of the year from the yachts participating in the Oyster World Rally Race. The people that came ashore requested island tours and were taken around various points of interest, learning about the

history, and the fauna and flora of Ascension. They were particularly interested in our golf course which made the Guinness book of records as the ‘world’s worse golf course’.

There was a visit in May from the Bark Europa and they enjoyed both our Island and Turtle tours during their time on the island.

We also had a visit from the MV Albatross cruise vessel in October where Conservation staff were fortunate enough to go on-board during a circumnavigation of the Island and talk to the passengers about Ascensions biodiversity and life on the Island. We also had the opportunity to sell souvenirs along with the Heritage Society, the Post Office and local gift shop businesses.



MV Albatross in Clarence Bay

In addition to the cruise vessel visits throughout the year we have held our regular land crab and turtle tours, which are all still very popular with both island residents and visitors. We have also held a few Island Tours for the crew of visiting cargo vessels. It is always a pleasure showing visitors around Ascension Island.



The Ascension Island Conservation & Fisheries Department was established by Ascension Island Government in 2001 to help fulfil its commitments under the Environment Charter and multilateral environmental agreements to conserve Ascension’s natural heritage. It has since established itself as the authority on Ascension Island’s biodiversity, with core programmes in terrestrial ecology and seabird and marine turtle research and conservation. The department has developed from one Conservation Officer to a staff of twelve and volunteers. We work closely with the other organisations on Ascension Island and also with a number of overseas partner organisations.



Keep up to date with the activities of the Conservation and Fisheries Department by following us on Facebook: www.facebook.com/AscensionIslandConservation and/or Twitter @AIGConservation. If you are interested in finding out more about visiting Ascension Island, eco-tourism packages are now available. Find out more here: <https://www.ascension.gov.ac/conservation/about-conservation> or email: conservationenquires@ascension.gov.ac

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