

# Green Mountain National Park Management Plan

2023-2028





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# 1. Vision

Green Mountain National Park's (GMNP) landscape, biodiversity and heritage will be conserved for the environmental, health and wellbeing benefits they bring to the island. There will be opportunities for everyone on Ascension to discover and enjoy the Park's unique identity and to participate in protecting it.

# 2. Purpose and scope of the plan

The plan sets out the legislation, policy and management actions that will safeguard GMNP. It is designed to provide a framework that can be used to inform and guide the many organisations and individuals who undertakes activities within GMNP. These include:

**Ascension Island Government** – The Ascension Island Government (AIG) has primary responsibility for managing the National Park and will take a lead on delivering many of the actions described in this plan. AIG employs a National Park Warden and Assistant Warden to manage Green Mountain with the assistance of other members of the Conservation and Operations Directorates.

**Partners**– Other organisations that use the National Park have important roles in meeting the plan's objectives. These include, the

Ascension Island Heritage Society, Ministry of Defence, United States Air Force, Sure Telecommunications, Encompass and Two Boats School. This plan will help to coordinate action so that everyone is working to protect and enhance Green Mountain.

**Island Community and Visitors**- both the Ascension Island community and visitors to the island benefit from GMNP's unique features. The plan recognises the positive impact this outdoor space has on people and the community and the contribution people can make to protecting Green Mountain. Working with the Ascension community, strategic aims have been developed to make the National Park accessible and valued by people living on the island.



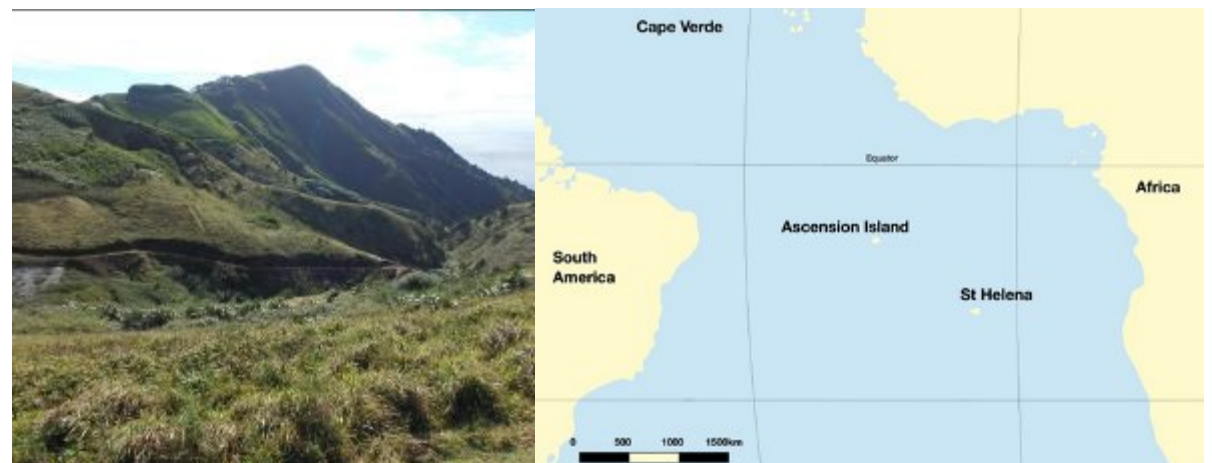
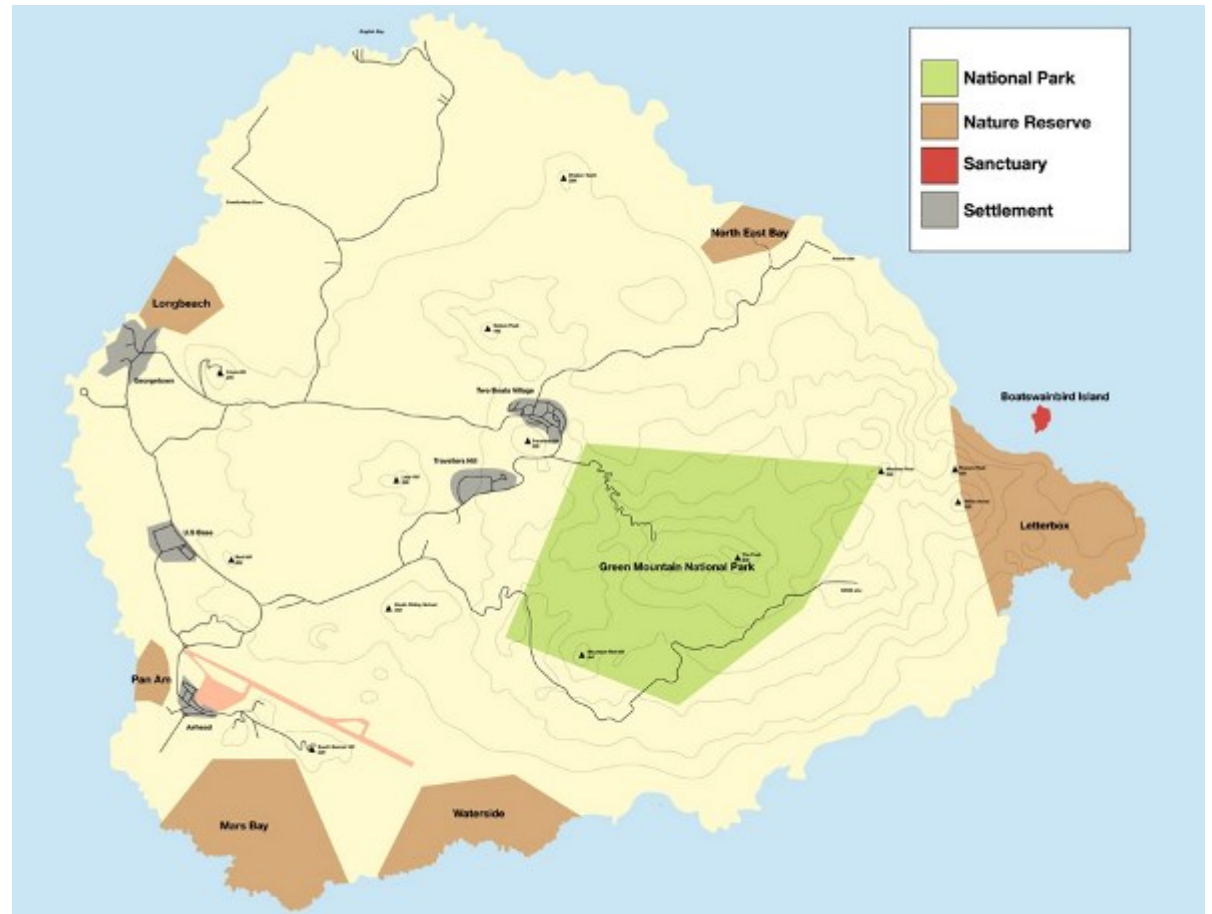
### 3. Introduction

Ascension Island is located in the centre of the Atlantic Ocean, just south of the Equator and west of the Mid-Atlantic Ridge. It is the tip of a 3200m-high volcano created around 1 million years ago. Most of the volcano is hidden beneath the Atlantic Ocean with the highest point above sea level being Green Mountain, at 859m.

Ascension Island supports a wealth of biodiversity including at least 67 endemic species found nowhere else on earth. To protect this biodiversity and meet Ascension's commitments under Target 3 of the Convention on Biological Diversity Post-2020 Global Framework, a network of ten protected areas has been created on Ascension including GMNP.

Designated in 2005, Green Mountain is Ascension Island's only National Park. At 9.46km<sup>2</sup>, it covers a large section of the south-eastern part of the island. As the name suggests, Green Mountain is well-vegetated compared to the more barren lowlands of the island. Its status as a National Park recognises the importance of the area for native biodiversity, cultural heritage and recreation.

Green Mountain has changed significantly since humans discovered Ascension in 1501. Plants from around the world were introduced to the mountain to increase the supply of fresh water and grow food for the early settlers. It is also the site of the earliest buildings on the island and still houses critical communications infrastructure.



## 4. Strategic objectives

The National Park has the potential to be a model for conservation and outdoor recreation. By enhancing biodiversity and preserving historical features, GMNP could generate both local and international interest, which in return can be used to help support the island community.

Below are GMNP's four strategic objectives and one supporting objective. Achieving these objectives will ensure the National Park's special features are conserved and the area continues to be a recreational hub for islanders and visitors to explore and learn in.

Green Mountain National Park's (GMNP) landscape, biodiversity and heritage will be conserved for the environmental, health and wellbeing benefits they bring to the island. There will be opportunities for everyone on Ascension to discover and enjoy the Park's unique identity and to participate in protecting it.

1

### Natural Heritage



Safeguard protected species and habitats within the National Park

2

### Cultural Heritage



Protect and conserve the historical features of the National Park

3

### Outreach



Educate members of the public about the natural and cultural history of Green Mountain

4

### Recreation



Encourage recreational use of the National Park to promote the health and wellbeing of people on the island

Supporting objective:  
Sustainable funding



Find sustainable sources of funding to manage the National Park



## 5. What makes Green Mountain special?

Green Mountain's special features are summarised by four main categories: natural heritage, historical features, outdoor classroom and recreational facilities.

### 5.1 Natural Heritage

Green Mountain's cooler temperatures and higher moisture levels made the area more inhabitable for early plant and animal arrivals and as a result, more native and endemic species are found within the National Park than anywhere else on the island.

#### Native and endemic plants

Green Mountain is the most important area on Ascension for plant biodiversity. Before the mass introduction of non-native plants and animals in the 19<sup>th</sup> century, Ascension's endemic and native flora thrived on the slopes of Green Mountain. Some of the non-native introductions have had devastating effects, with three of the ten endemic higher plants going extinct before conservation measures could be undertaken. Six of the seven remaining endemic plants are still found within GMNP (see diagram on the right) as well as 15 species of endemic bryophytes. The National Park is the only place in the world where these populations are found and the work to conserve them is globally-important.

#### Colonisation

*Considering the extreme isolation from continental land, it may seem hard to believe that plants and animals could have reached Ascension Island naturally.*

*Ascension's pristine vegetation consisted largely of ferns, mosses, liverworts and lichens. All these groups have reproductive stages that can be transported long distances by wind, and are likely to have established on Ascension quickly (Ashmole et al. 2000).*

*Turtles, seabirds and the land crab are all species that are equipped for long migrations using air or sea currents, and will have relatively easily made it to the island.*

*Natural colonisation by less equipped species such as flowering plants, insects and spiders happened as a result of rare events. Transport across such large expanses of ocean is very improbable, but given a long enough timespan, in this case one million years, it does sometimes happen. Air and sea drifts, or translocation by birds and driftwood are likely to have brought these types of species to Ascension. (Ashmole et al. 2000).*

*Once a species has colonised a new location they will then adapt to their new habitat to increase the probability of their survival. This will happen over many thousands of years and can result in new endemic species developing.*





Some endemic ferns have made the most of new habitats created by introduced flora. The moss fern *Stenogrammitis ascensionensis* that once grew on mossy banks can now be found on moss covered trees and bamboo. These have the added advantage of being out of reach of many introduced mammals such as sheep and rabbits.

An updated Endemic Plant Management Plan is being prepared to secure the future of these species.

### Native animals

#### Land crab, *Johngarthia lagostoma*

Green Mountain's most charismatic resident, and Ascension Island's largest native terrestrial animal, is the land crab. It is thought that before the greening of the mountain, land crabs

had a more carnivorous diet of seabird chicks and other invertebrates. The introduction of non-native vegetation and the historic decline of seabirds are thought to have changed the crabs' feeding habits, leading them to become predominantly herbivorous. Green Mountain's mild, damp climate and plentiful food supply makes it the perfect home for these captivating animals and is where their population density is at its highest. Land crabs spend most of the day in burrows, preferring to come out at night or after rain when it is cooler.

#### Other invertebrates

Green Mountain is rich in invertebrate life, and accommodates at least three endemic species of moth. Two belong to the *Erechthias* genus of fungus moth: *E. grayi* and *E. ascensionae*. The former species (below, centre) is notable for

having significantly reduced wings which prevent flight. This is presumed to be an adaptation to exposed and windy conditions. A third endemic moth, *Scopula ascensionis*, belongs to the geometrid moths and was discovered only in 2017. There is also an abundant yet unknown species of *Solenopsis* ant belonging to the *molesta* complex which may be near-endemic to Ascension and St Helena.

#### White tern, *Gygis alba*

Locally known as the fairy tern, these delicate and inquisitive birds are the only native bird breeding within the National Park. Nesting colonies can often be seen in the trees and cliffs from the mountain road, as well as along Middleton's path. White terns lay a single egg in a hollow on bare branches, or on a rock ledge, which is incubated by both parents.



## Cloud Forest

Today Green Mountain is a lush green space. Most of the plants found there are not native and were introduced in an experiment recommended by the well-known naturalists Charles Darwin and Sir Joseph Hooker in the 19<sup>th</sup> century. They succeeded in creating a unique, artificial cloud forest and achieved their aim of increasing the amount of mist and rainfall captured on the mountain to supply the people living on Ascension with fresh water.

In 1847, the first consignment of trees was sent to Ascension from Kew Gardens in the United Kingdom. Navy personnel on Ascension took on the task of randomly planting these trees across Green Mountain, and a unique collection of plants began to grow alongside one another. Over the next few years more than 220 plant species from around the world arrived on Green Mountain and a chain reaction of rapid plant growth, soil creation and plant dispersal was underway.

Green Mountain is said to contain the only manmade cloud forest in existence. This makes it a unique biome for future study, and may provide clues on habitat management solutions within changing climates. However, the



introduction of so many non-native species has been damaging for Ascension's endemic and native species. Green Mountain is home to six of Ascension's seven surviving endemic plants. Some of these endemic plants evolved to grow on damp, mossy, windswept rocks and cinder banks around the mountaintop. This habitat changed radically with the introduction of non-native plants. Thick cloud forest, dense thickets of invasive ginger and many more non-native plants now smother the upper slopes. Yet remarkably, some of the island's endemic plant species have adapted to survive in a new habitat with mosses and ferns growing on tree branches and bamboo trunks, and larger ferns making an understory beneath the mature

trees.

Not all non-native species brought to the island became invasive and some are actually beneficial. With cloud zones rising higher in the atmosphere due to the effects of climate change, beneficial non-native tree species will continue to be planted to allow the capture of cloud and provide habitats for the endemic plants and bryophytes.

AIG is working to maintain and connect areas of cloud forest that endemic vegetation can colonise, whilst removing the species it cannot coexist with. It is hoped Green Mountain will continue to support this unique and resilient habitat long into the future.



## 5.2 Historical features

With natural springs and a more habitable climate, it's no surprise the first settlers on Ascension chose Green Mountain as a base. Some of the earliest structures and signs of human activity on Ascension are found within the National Park, including buildings, infrastructure, paths and tunnels. These historical features help to tell the story of the park's past uses, including as a defence lookout, semaphore station, garrison, farm, water supply, sanatorium and cemetery.

An assessment of Ascension's historical and cultural heritage was carried out by Wolfe et al. (2013). This study concluded that Green Mountain has highly significant historical features, which could provide benefits to the island. The report mentioned the Royal Marines Barracks and Garden Cottage situated within the National Park as high profile sites to focus efforts on.



### Historical buildings

The Red Lion building, Marine Barracks and Garden, Rock, Barters and Bell cottages, all represent the remnants of former uses of the mountain. Garden Cottage was built in 1817 and may be the oldest surviving building on Ascension (Wolfe 2013). Built in 1833, the Marine Barracks was the original accommodation for the Royal Marine farm workers. However, 30 years later it became unfit for human habitation and was converted into cow sheds. The Red Lion was built to replace the Marine Barracks and housed farm workers until the 1990s when the farm closed.

### Mountain footpaths

The rich history surrounding the creation and maintenance of Green Mountain's footpaths mean that they too are an important historic feature. Military personnel began cutting path networks into the mountainside as early as 1815. Some paths such as Elliot's Pass, which encircles the summit of Green Mountain, was used back in 1840 as a naval lookout post to watch for passing ships.



### Water catchment infrastructure

For early settlers, the biggest challenge facing them was sourcing fresh water. Breakneck Valley, Middleton Spring, Palmers Farm, Dampier's Spring and near south east cottage, all have historic water tanks, which are still present today. Breakneck Valley is home to a tunnel and a series of wells that enabled water to be transported via pipes, from the valley, directly to the mountain farm and gardens, and Georgetown, the first major settlement on the island. On the summit is the dew pond (shown above), which supplied water for livestock.



### 5.3 Outdoor classroom

There are huge benefits in providing both children and adults with opportunities to access outdoor environments for learning. Green Mountain is the perfect space for school groups, youth clubs, adult groups and families to use.

Outdoor learning improves child development and academic performance. It helps foster the development of creativity, problem-solving, independence, and confidence, as well as enhancing people's ability to focus. It nurtures imagination, uplifts the senses, and promotes happiness and productivity. By heading outside and learning in nature, people increase their emotional, intellectual, and behavioural development.

Each year Green Mountain hosts the Explorer's Club organised by AIGCFD for 8-14 years olds during the winter school holidays. It is the destination for a number of school trips each year and is frequently used by island youth groups such as Scouts and Brownies. Green Mountain is an important place for families on weekends and holidays to explore and learn about the island's natural and cultural heritage.

## 5.4 Recreational facilities

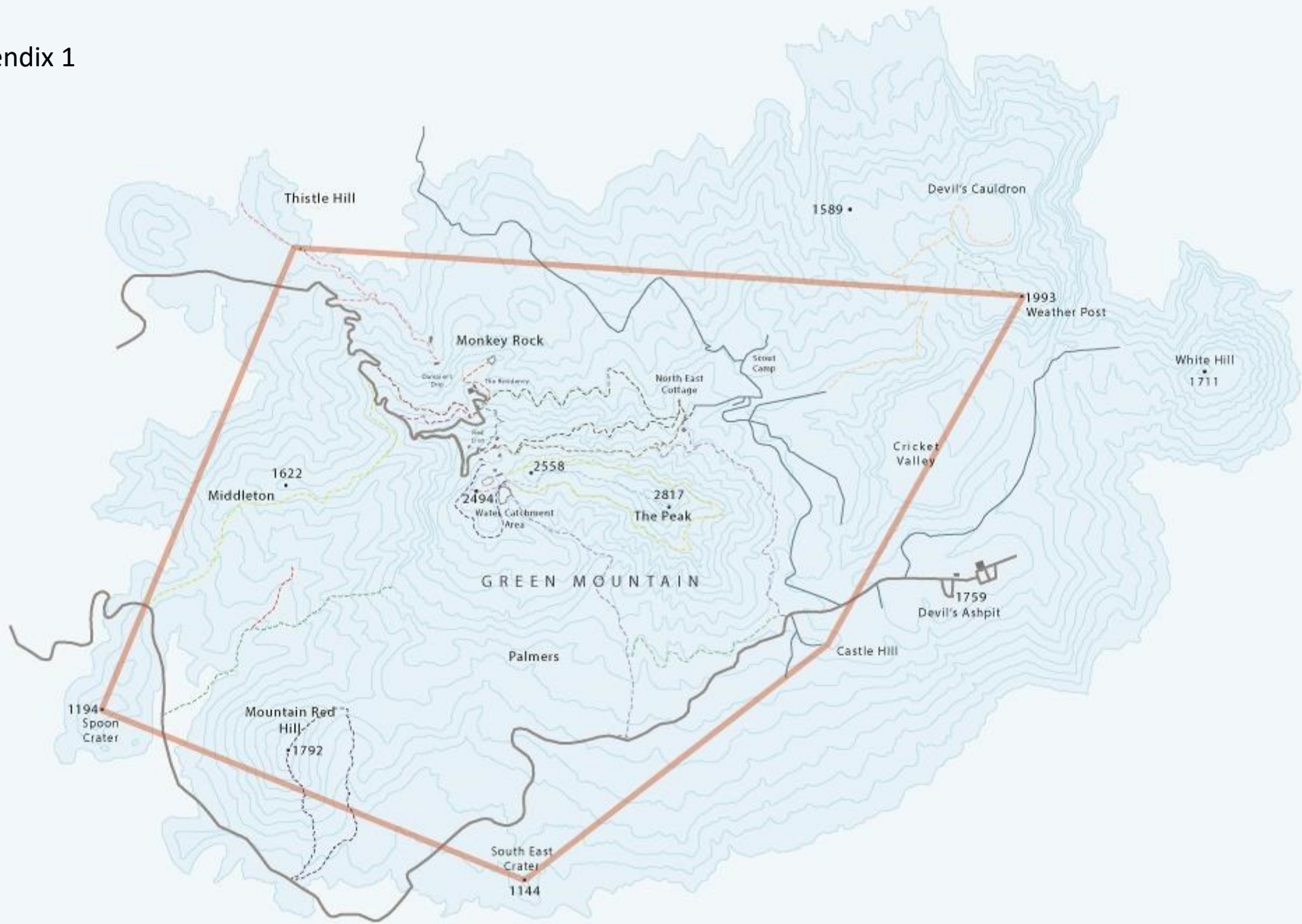
With its vast network of paths, endless viewpoints, camping spots, picnic areas, historic features and interesting fauna and flora, it's hard to get bored on Green Mountain. Outdoor space has long been known to help improve health and happiness, with research showing people who spend more time in green spaces have better general well-being. The mountain provides a place to connect with nature, reduce stress and increase happiness.

In total there are 36km of paths within GMNP ranging from easy strolls to steep challenging treks. 22 of these paths are part of the network of Letterbox walks on Ascension.

In a study of cultural ecosystem services, Green Mountain was highlighted as a place that is special and important for Ascension Island residents to visit for leisure (Canelas et al. 2019). 35% of respondents listed Garden Cottage, Red Lion, Elliot's Pass, Breakneck Valley or GMNP as an important place for them. Leisure activities mentioned include picnics and hiking across the historical paths.



# Appendix 1



----	BISHOP'S PATH	----	RUPERT'S PATH	----	ZIGZAG PATH	----	CONVALESCENCE PATH	----	DEVILS CAULDRON TRAIL	----	DUCK POND TRAIL	—	ROADS
----	BREAKNECK VALLEY TRAIL	----	CRONK'S PATH	----	WAR PATH	----	MONKEY ROCK PATH	----	WEATHER POST TRAIL	----	BULLOCKS POND TRAIL	■	BUILDINGS
----	ELLIOT'S PATH	----	SCOUTS PATH	----	MIDDLETONS PATH	----	DAMPIER'S PATH	----	INVALIDS TRAIL	----	CONTOUR	▬	PARK BOUNDARIES
----	DEW POND	----	NATURE TAIL	----	INVALIDS TRAIL	----	QUEEN ELIZABETH II TRAIL	----	MOUNTAIN RED HILL TRAIL	----	DIRT ROAD	□	CATCHMENT





## 6. Management and uses

### 6.1 Management

The AIG is responsible for managing GMNP. The Warden team, within the Conservation and Fisheries Directorate, takes the lead on its day to day management including path maintenance, biodiversity protection and educational activities.

The AIG Operations and Facilities Directorate leads on the upkeep of the mountain road, buildings and water system as well as maintaining a cleared area along the overhead electrical powerline.

### 6.2 Current uses

Currently GMNP is managed to accommodate the below activities or services for the island community, visitors and organisations:

- **Antenna** - support the digital radio, television and mobile phone systems. This is critical for island communications, with no other location able to provide the same extensive coverage. These installations are managed by the organisations that operate them under Land Occupancy Permits (LOPs) issued by AIG.
- **The Residency** - home to the Administrator and used to accommodate formal receptions and island events.
- **Conservation restoration work including shade houses** - essential part of conservation efforts for Critically Endangered endemic plants found only on the mountain.
- **Walking routes** – 14 Letterbox walks and four other popular paths are found on the Mountain.
- **Allotments** - eight plots tended by private individuals under LOPs issued by AIG.
- **Met Office weather station** - Home to one of four monitoring stations on the island.
- **Garden Cottage** – building managed by AIG and let to people living on Ascension usually for weekends or other short stays.
- **Camping** - Popular areas are used regularly on bank holidays, and less frequently at other times of year.



In order for these uses to take place, the following services are maintained:

Use	Road Suitability		Water	Electricity	Pest control	Path maintenance	Gardening (Residency and Garden Cottage lawn)
	Cars	4WD					
Antenna		x		x			
Residency	x		x	x	x		x
Residency events	x		x	x	x		x
Conservation shade houses		x	x		x		
Walking	x	x			x	x	
Allotments	x		x		x		
Met Office weather station		x					
Garden Cottage/camping	x		x	x	x		x



## Activities required to maintain these services

Service	Routine maintenance	Potential future investment
	Description	Description
Road	<ul style="list-style-type: none"> <li>Regular clearing of vegetation, rock slides and tree falls.</li> <li>Pot holes repaired periodically.</li> </ul>	<ul style="list-style-type: none"> <li>Stabilise banks at Red Lion parking areas</li> <li>Resurfacing</li> <li>Drainage gullies</li> <li>Reinforce bollards on mountain road</li> <li>Create three new car parks off the NASA road located at Breakneck, War and Middleton's paths</li> </ul>
Water	<ul style="list-style-type: none"> <li>Weekly checks of pump and chlorine dosing of top and Residency water tanks.</li> <li>Well shaft needs cleaning every 10 years</li> <li>Clearing of vegetation around water tanks and along paths to get to tanks.</li> </ul>	<ul style="list-style-type: none"> <li>Pump replacement</li> <li>New pipe system to avoid frequent water quality fails</li> <li>Repairs to pipe in mountain tunnel</li> <li>Removal of legacy pipes</li> </ul>
Electricity	<ul style="list-style-type: none"> <li>Infrastructure maintenance carried out by Encompass</li> <li>Remove trees along overhead power line</li> <li>Vegetation clearance for access to the antenna</li> </ul>	<ul style="list-style-type: none"> <li>Distribution box replacement</li> <li>Removal of legacy live cables</li> <li>Replacement of back-up generator</li> </ul>
Path and historical feature maintenance	<ul style="list-style-type: none"> <li>Frequent path clearing of vegetation and rock slides.</li> <li>Frequent vegetation clearance from around historical buildings and features.</li> </ul>	<ul style="list-style-type: none"> <li>Cutting into rock face to widen contour paths</li> <li>Replacement of bridge at Banana Ravine</li> <li>Steps put into areas that are steep and slippery</li> <li>Way markers put in to mark paths</li> </ul>
Gardening	<ul style="list-style-type: none"> <li>Maintain Residency garden</li> <li>Vegetation clearing around Garden Cottage including cutting of grass in picnic area and Garden Cottage lawn</li> </ul>	<ul style="list-style-type: none"> <li>Maintain the Red Lion lawn</li> </ul>
Pest control	<ul style="list-style-type: none"> <li>Rat poison frequently used to reduce the presents of rats</li> <li>Pests removed from endemic plants to ensure survival</li> <li>Shade houses maintained to keep pests out</li> <li>Garden cottage and Red Lion treated for termites and cockroaches</li> </ul>	<ul style="list-style-type: none"> <li>Improved methods of rodent control trialled</li> <li>Shade houses replaced</li> </ul>



# 7. Legislation and Policy Context

Green Mountain National Park forms part of a network of ten protected areas that are a central part of Ascension’s approach to protecting its biodiversity and meeting its commitments under international agreements and strategies.

## International agreements and strategies

The [Convention on Biological Diversity](#) (CBD) has been extended to Ascension and provides the overarching context for biodiversity protection on the island. Target 3 of the CBD Post-2020 Global Biodiversity Framework reads: *Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.*

The need for well-managed area-based protection is also a foundation the [UK Overseas Territories Biodiversity Strategy](#) and fulfills Ascension’s obligations to protect habitats and species under the [Ascension Environmental](#)

[Charter](#) signed in 2001. Local legislation provides the legal basis for the establishment and management of GMNP.

## Ascension protected areas legislation

The [National Protected Areas Ordinance, 2003](#), provides the Governor with powers to designate National Parks ‘primarily for the purpose of conserving features of natural and/or historical interest.’ It also limits the type of development that can be permitted within a national park and allows the restriction of activities that could be harmful to a national park. The Ordinance also provides powers to introduce regulations to protect National Parks and to appoint Park Wardens to enforce these regulations.

GMNP was originally designated in 2005, but nine years later was re-designated along with Ascension’s other terrestrial protected areas under the [Natural Protected Areas Order, 2014](#).

The [National Protected Areas Regulations, 2014](#), prohibit a list of potentially harmful activities within GMNP without prior

permission from the Administrator or Reserve Warden (see next page). They also provide powers for the Administrator to close all or part of the National Park for the purposes of management, wildlife protection or public safety.

## Other relevant Ascension legislation

Under the [Wildlife Protection Ordinance, 2013](#), it is an offence to willfully take, kill, trade or molest any of 40 species listed in the ordinance. The following species found within GMNP are protected by this ordinance:

- White terns, *Gygis alba*
- Land crab, *Johngarthia lagostoma*
- Parsley fern, *Anogramma ascensionis*
- Purple fern, *Ptisana purpurascens*
- Feather fern, *Pteris adscensionis*
- Moss fern, *Stenogrammatis ascensionense*
- Ascension Island spleenwort, *Asplenium ascensionis*
- Hedgehog grass, *Sporobolus caespitosus*

The [Biosecurity Ordinance, 2020](#), introduced import control measures and powers to inspect and treat cargo, vessels and aircraft arriving on Ascension with the aim of reducing the likelihood of introducing new non-native species to the island.

### **The National Protected Areas Regulations**

All or any of the following are prohibited within GMNP if done without the prior permission of the Administrator or Reserve Warden:

- any development;
- the improving or altering of any existing structure;
- the removal of sand, soil or rock;
- the intentional or reckless disturbance to, or damage or injury to, any protected species;
- the dumping of refuse, chemicals, abandoned vehicles, scrap metal, mining spoils, toxic or other wastes, bilges, oil and other petroleum products, pesticides and other items harmful to animals or plants, or unsightly items;
- the driving or riding of motor vehicles other than on a designated road or track or in a signed parking zone;
- parking a vehicle, except in a signed parking zone;
- the making of fires without a permit other than in a portable stove or grill, or in designated fire pits;
- playing any musical instrument, radio, sound system, television or other item which produces or reproduces music, to the annoyance of other persons;
- the use or possession by any person, other than a Warden acting in the course of his or her duties, of any type of firearm, air gun, cross bow, bow and arrow or slingshot;
- the taking of any animal, plant or artifact by any method out of the national park area;
- the tampering or interference in any way with any natural spring or “drip”;
- the intentional or reckless destruction of or damage to any building, artifact or enclosed concrete water catchment area.
- camping except in a designated camping zone;
- erecting any structure.



## Implementation of policy

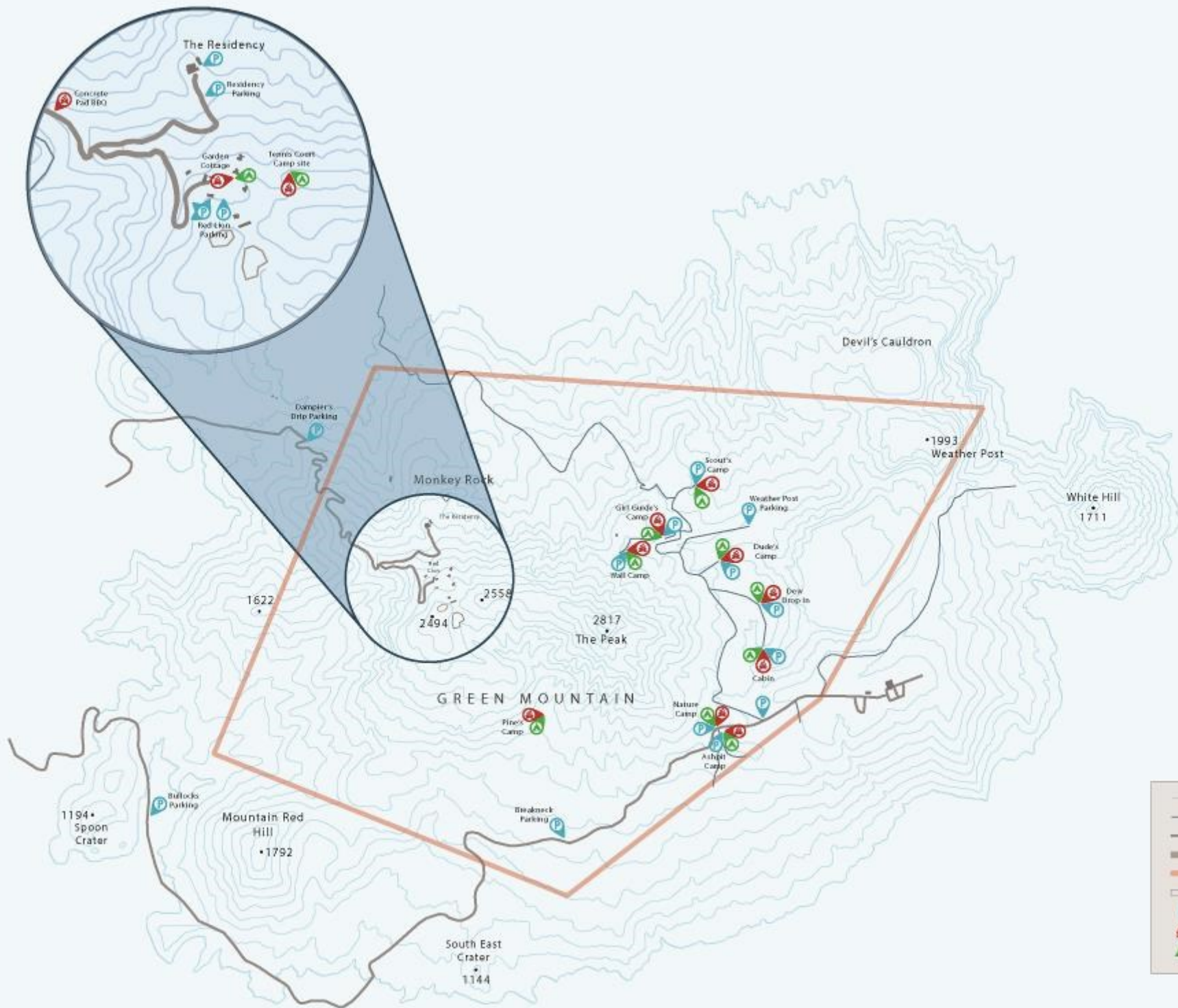
The National Protected Areas Regulations, 2014, are in place to prevent activities that might harm the natural or historic features of the National Park or reduce people's enjoyment of it. There is a presumption against all of these activities taking place in the National Park, but the Administrator or Park Warden have discretion to permit them on a case by case basis. When deciding whether to permit an activity, the Administrator or Park Warden must consult the Director of Conservation and will consider the following:

- Whether an activity is consistent with the objectives of this management plan. The onus will be on the person proposing the activity to demonstrate that it will not conflict with the objectives. Activities that would have a significant negative impact on the National Park objectives will not be permitted.
- Whether the activity will have a significant and/or long-term impact on the natural or historic features of the National Park. Activities that would have a significant or long-term impact on the natural or historic features of the National Park will not be permitted. Decisions of this nature must be referred to the Administrator and cannot be made by a Park Warden.
- Whether the activity is necessary for the island's military mission or critical functions. Such activities can be permitted if all alternatives have been exhausted and all available mitigations have been put in place. Decisions of this nature must be referred to the Administrator and cannot be made by a Park Warden.
- Where there is doubt or lack of evidence about an activity's impact, the precautionary principle will be applied and the activity will not be permitted.
- Restrictions on public access to the National Park will only be authorised by the Administrator where it is necessary to prevent the risk of significant disturbance or damage to the natural or historic features, or where there is a risk to public safety. Restrictions will be in place for the shortest time period and over the minimum area possible.
- The Administrator has granted permission for everyone living on Ascension to take any of a list of edible plants from the National Park (Appendix).
- A map showing the designated roads, tracks, parking zones, fire pits and camping zones is shown on the next page.



### Enforcement

Enforcement action is always be carried out with proportionality, consistency and accountability to ensure it is fair and seen to be fair. Education and awareness raising are the preferred methods to ensure compliance, and proportionate enforcement action will only be taken when this approach has been exhausted. The maximum penalty for an offence under the National Protected Areas Ordinance or Regulations is a fine of £20,000 or imprisonment for 12 months. All warranted Park Wardens, Fishery Protection Officers and Police Officers are able to take enforcement action.



- CONTOUR
- DIRT ROAD
- ROADS
- BUILDINGS
- PARK BOUNDARIES
- CATCHMENT
- P PARKING AREAS
- 🔥 FIRE PIT
- ⛺ CAMP SITE





## 8. Threats to Green Mountain National Park

There are a range of threats to achieve GMNP objectives set out within this management plan. These threats are discussed on the following pages.

### 8.1 Climate change

Climate change will have a profound effect on GMNP. The average altitude of clouds is predicted to rise by up to 200m before the end of the century, meaning fog will become much rarer on mountains. For cloud forest ecosystems such as Green Mountain's upper slopes, fog is the main source of moisture. The loss of cloud is predicted to cause cloud forests globally to shrink to a fraction of their former range, while some may be lost entirely.

Global temperatures are predicted to rise by

between 0.7 And 2.4°C depending on global CO<sub>2</sub> emission reductions, making the lower slopes of the mountain less suitable for plant growth.

Another effect of climate change is the disruption of regular climate cycles, making extreme weather events such as droughts and heavy rain events more common.

The six species of endemic plants and 15 species of endemic bryophytes found within GMNP rely on high moisture levels for survival and reproduction. Any reduction in fog or increase

in the length or intensity of droughts would cause these populations to decline. Land crabs are also prone to desiccation. The mountain will probably remain suitable for them, but their migration routes and spawning could become too hot and dry for their survival.

Increased heavy rainfall events will lead to more landslides that will damage the habitat of endemic species as well as the path network and historical features of the mountain.

	Nature of threat	Impact	Features most affected
Natural Heritage	1.1a Rise in cloud altitude	Loss of cloud and precipitation	Cloud Forest, endemic plants and bryophytes
	1.1b Drought	Desiccation	Endemic plants and their habitats. Land crabs
	1.1c Extreme rainfall events	Landslides affecting areas of endemic plants	Endemic plants and their habitats
	1d Increased temperature	Heat stress	Land crabs
Cultural Heritage	1.2a Extreme rainfall events	Flooding and landslides	Mountain buildings
Recreation	1.3a Extreme rainfall events	Landslides causing destruction of footpaths	Walking trails

## 8.2 Non-native invasive species

The number of non-native plants and animals on Ascension dwarfs that of native and endemic species thanks to waves of deliberate or unintentional introductions. The majority of species within GMNP are not native to the island. Some of these are benign or even beneficial to the native flora and fauna, but some species are extremely invasive and causing considerable damage.

Plant species such as guava, maidenhair fern, ginger and Coster's curse are well-suited to the conditions within GMNP and grow prolifically.

This crowds out the native and endemic plants, which are less aggressive and unable to compete against their fast growing rivals. Even if native plants can hold their own when mature, they may struggle to find the space for juveniles to regenerate. The purple fern is long-lived and stands of large, mature plants exist within the blanket of non-natives on the mountain. However, it requires bare patches of earth for spores to germinate, which no longer exist on the mountain due to the profusion of non-natives.

Non-native animals also threaten biodiversity in

GMNP. Rats and non-native invertebrates are pests to native and endemic plants and predators or competitors of endemic invertebrates and land crabs.

The cultural and recreational value of GMNP is affected by non-native species. It requires constant effort to remove non-native vegetation from around the mountain buildings and along the walking paths and road verges. As well as blocking access, these plants can cause structural damage through their root systems and by creating damp conditions.

	Nature of threat	Impact	Features most affected
Natural Heritage	2.1a Competition between native and non-native species, including non-native plant encroachment	Out competing endemic and native plant species. Modification of habitat structure and microclimate.	Endemic plants and endemic/native invertebrates
	2.1b Invasive animal species preying on native animals	Population decline	Land crabs, endemic/native invertebrates
	2.1c Non native grazing animals damaging endemic and native plants	Population declines	Endemic plants
	2.1d Unexpected species interactions as a result of poor ecological understanding	Population decline	Endemic/native invertebrates
Cultural Heritage	2.2a Vegetation encroachment	Damage to features through root damage	All built historical features
Recreation	2.3a Vegetation encroachment	Overgrown paths making them impassible	Walking trails

### 8.3 Human impact

Human impact can be both beneficial and detrimental to National Parks. It is important to create a balance between enjoyment of special features and ensuring it remains unspoiled.

There is a legacy of litter within GMNP with disused fencing, electrical cabling and water pipes scattered across the area. General waste such as glass bottles and cans are also commonly

discovered, which have been discarded over the decades both before and after the National Park was designated. The volume of litter is a health and safety concern as it could cause injury to people who come into contact with it. Litter is unsightly and can greatly impact a visitor's level of enjoyment when exploring the park.

Park visitors may unknowingly walk, drive or park

vehicles on native/ endemic or beneficial non-native plants if they stray off footpaths and roads.


Infrastructure maintenance and development can disturb plants, land crabs, fairy terns and also damage historical features if it is not carried out sensitively.

	Nature of threat	Impact	Features most affected
<b>Natural Heritage</b>	3.1a Litter and pollution	Entanglement, ingestion and toxicity associated with plastics	All animals and plants
	3.1b Development	Habitat destruction. Crushing and smothering of animals and plants.	All animals and plants
	3.1c Disturbance	Trampling of habitats and increased disturbance	Land crabs and their burrows. Fairy tern nesting sites. Endemic/native plants and invertebrates.
<b>Cultural Heritage</b>	3.2a Destructive development or neglect of	Historical features damaged or destroyed	Historical features
<b>Recreation</b>	3.3a Litter	Health and safety concern. Lower visitor enjoyment	Reduced visitor enjoyment
<b>Outreach</b>	3.4a Declining interest in the islands nature and biodiversity	Lack of ownership within the population	All features


## 9. Operational objectives and management actions

Operational objectives define the measurable goals we want to achieve within the five year scope of this management plan.

The Four main strategic objectives have been broken down into clear and defined operational objectives. For each operational objective, we have identified management actions with targets against which we can measure progress.

Strategic objective 1	Operational objective	Action	Targets	Threat addressed
 <p data-bbox="120 727 353 895">Safeguard protected species and habitats within the National Park</p>	1.1 Maintain and expand the range and abundance of endemic flora within GMNP.	1.1a Through Darwin-Plus funded project DPLUS159, create a detailed evidence-based restoration plan for five endemic plant species found within GMNP. Continue with <i>in situ</i> and <i>ex situ</i> endemic plant restoration work until the restoration plan is published.	Increase the abundance of two endemic plant species in wild by 10%. Published restoration plan by 2025	1.1a 1.1b 2.1a 2.1b 2.1c
		1.1b Maintain intact favourable habitat through invasive species clearance.	Clear a minimum of 500m <sup>2</sup> of invasive species each year.	2.1a
		1.1c Propagate and plant out beneficial trees to expand the manmade cloud forest.	Clear scrub and plant out beneficial trees samplings in an area of 4000m <sup>2</sup> between Dew Pond and Coronation Peak by 2025.	1.1a 1.1b 2.1a
		1.1d Through DPLUS159, create control plan detailing optimum control methods identified for eight key invasive species, using a combination of literature searches and replicated field trials.	Publish invasive species control plan by 2025	2.1a 2.1b 2.1c
		1.1e Seek funding and partner support for a study to assess the suitability of established biological control agents of invasive species within GMNP	Recommendations of study completed by 2024	2.1a 2.1b 2.1c
		1.1f Eradicate Strawberry guava ( <i>Psidium cattleianum</i> ), New Zealand Flax, ( <i>Phormium Tenax</i> ) and Wild Mango ( <i>Schinus terebinthifolius</i> ) from GMNP	Eradicate by 2030	2.1a

Strategic objective 1:	Operational objective	Action	Targets	Threat addressed
Safeguard protected species and habitats within the National Park	1.2 Maintain the abundance of land crabs in GMNP	1.2a Carry out impact assessment before all development and major maintenance work within GMNP to minimise any destruction of land crab habitat or disturbance.	Impact assessments carried out prior to 100% of all developments or major maintenance work in GMNP. Mitigations applied so that no developments that could result in significant negative impacts are permitted.	3.1b 3.1c
		1.2b Control rodents in key habitats on Green Mountain using poison baited boxes.	Set rodent boxes along all major paths on Green Mountain and check at least every three months.	2.1b
		1.2c Public engagement campaign to encourage safer driving and fewer road deaths.	Reduce road deaths by 30% by 2025.	3.1c
		1.2d Organise land crab spawning tours at North East Bay.	At least 50 members of the public attend crab tours each year.	3.1c
		1.2e Complete IUCN Red Listing for the land crab.	Land Crab IUCN Red Listed by 2025.	3.1d
	1.3 Understand and maintain endemic invertebrate species in GMNP	1.3a Invasive vegetation at key endemic invertebrate habitat sites.	Maintain non-native plant clearance around Windy Ridge and Cricket Valley restoration site. Instigate non-native plant clearance at Slimy Wall to a radius of at least 10 m around the feature.	1.2a 2.2a
		1.3b Red List assess all endemic moths in the GMNP.	Three species of endemic moth Red Listed by 2025.	2.1d 3.4a
		1.3c Resolve taxonomy of possible endemic ant species, and Red List if a distinct species.	One species of ant with taxonomy resolved by 2025, and Red Listed only if endemic.	2.1d 3.4a
		1.3d Trial and instigate invasive ant control at sites of importance to endemic moths.	Ant poisoning protocol established and initiated at two key sites.	2.1d
	1.4 Maintain White tern abundance in GMNP	1.4a Carry out impact assessment before all development and major maintenance work within GMNP to minimise any destruction of tern habitat or disturbance to nesting birds.	Impact assessments carried out prior to 100% of all developments or major maintenance work in GMNP. Mitigations applied so that no developments that could result in significant negative impacts are permitted.	3.1b 3.1c

Strategic objective 2: 	Operational objective	Action	Targets	Threat addressed
Protect and conserve the historical features of the National Park	2.1 Bring historic buildings back into use	2.1a Clear Marine Barracks, take down roofing, make walls safe, open up archways at the rear of the building and install picnic benches	Open the Marine Barracks to visitors by 2027	3.2a
		2.1b Clear North East cottage and repair fallen wall so it can be used as picnic area	Open North East Cottage to visitors by 2027	3.2a
		2.1c Source funds and skilled persons to dismantle and rebuild the Red Lion Lawn arch way	Archway repaired and in use by 2025	3.2a
	2.2 Limit further deterioration of historic features	2.2a Keep historical features clear of vegetation	Each historical feature cleared of vegetation once a year	3.2a




Strategic objective  
3




Educate members of the public about the natural and cultural history of Green Mountain

Operational objective	Action	Targets	Threat addressed
3.1 Educate the public about the natural heritage of GMNP.	3.1a Organise an annual Mountain Festival to encourage the island community to explore GMNP and learn about its natural heritage.	At least 100 people attend festival each year	3.4a
	3.1b Maintain signage already installed within GMNP	Clean signage and every three months	3.4a
	3.1bc Provide leaflets about GMNP at the Red Lion	Fill leaflet dispensers weekly	3.4a
	3.1d Update National Park, land crab and invertebrate leaflets.	Have leaflets printed before 2030	3.4a
	1.2d Organise tours for members of the public to witness Land crab spawning events at North East Bay.	Provide two crab tours during the spawning season each year. At least 50 members of the public attend crab tours.	3.4a
	3.1e Work in partnership with Two Boats School and provide science lessons/ explorer sessions about Green Mountain's flora and fauna	Provide two events aimed at school children annually	3.4a
	3.1f Use social media and the Islander newspaper to educate people both off and on island about Green Mountain's important species	At least six Facebook/ Twitter posts and six Islander articles	3.4a
3.2 Educate the public about the cultural heritage of GMNP.	3.2a Work in partnership with the Ascension Island Heritage Society to design and install new heritage boards at important historical features	New signs for Northeast cottage, Monkey Rock cemetery, the Residency, Breakneck Valley and Dampier's Drip in place by 2024	3.4a
	3.2b Work in partnership with the Heritage Society to include GMNP's historical features in the annual Mountain festival	Heritage activity included in the annual Mountain Festival reaches a minimum of 100 people.	3.4a
	3.2c Through social media engage with the wider public about the historical features of GMNP	One social media post/ islander article a year that focuses on GMNP's historical features	3.4a
	3.2d Work with the Ascension Island Heritage society to develop GMNP section in the new 5 <sup>th</sup> edition of the Letterbox book	New GMNP section will be present in the fifth edition of the Letterbox book	3.4a



Strategic objective 4:	Operational objective	Action	Targets	Threat addressed
 <p>Encourage recreational use of the National Park to promote the health and wellbeing of people on the island</p>	4.1 Increase the number of visitors to the Park	4.1a Hold community events, encourage school classes and provide guided tours within GMNP	Reach 150 people through community events including annual Mountain festival	1.2a
		4.1b Create regular and varied volunteering opportunities to encourage members of the community to play a role in managing GMNP	At least 400 volunteer days per year contribute to GMNP management. All demographic groups on the island take part in volunteering	1.3a 2.2a 2.3a 3.2a 3.4a
	4.2 Make GMNP more accessible to visitors	4.2a Improve mountain road by stabilising banks, removing dangerous trees and replacing bollards	Complete road improvement works by 2024	3.2c
		4.2b Provide better access to GMNP from the NASA road	Designate and create three car parks at Middleton’s, Nature Trail and Breakneck paths by 2025	3.1c
		4.2c Develop a leaflet that shows new car parks and all paths, tracks and roads that allow access into GMNP	Leaflet printed before 2025	3.2a
		4.2d Install footpath way markers and path signs on all GMNP footpaths	4.2d Way makers installed before 2024.	3.1c 3.2a
	4.3 Create opportunities for self-guided informative walks and natural play	4.3a Maintain all GMNP paths	4.3a Dedicate 210 staff and 320 volunteer days to clearing paths each year	1.3a 2.2a 2.3a
		4.3b Improve Red Lion lawn area to act as the main hub of GMNP. This will include fixing the perimeter fence, creating BBQ and shaded seating.	4.3b Submit capital bid proposals to the AIG by 2030	3.4a
	4.4 Create opportunities for family and social get together	4.4a Designate and create camping areas at Rupert’s tennis court, scouts camp, guide camp, and opposite the entrance of War and Nature trail. Advertise on new GMNP leaflet	4.4a Designate and install all before 2030	3.1a 3.1c 3.4a

Supporting Objective:	Operational objective	Action	Targets	Threat addressed
 Find sustainable sources of funding to manage the National Park	5.1 Generate a sustainable income to help fund management of the GMNP	5.1a Promote the availability of Garden Cottage as a holiday let	Income generated to exceed maintenance costs.	3.4a
		5.1b Place a secure donation box at the Red Lion	Install donation box by 2024	3.4a
		5.1c Design and order GMNP merchandise and sell in the Conservation Shop	Make £1000 profit by 2025	3.4a
		5.1d Organise fund raising events e.g. Dew Pond run (with entry fee), sponsored mountain Letterbox walks for adults and children, GMNP tea party.	Raise at least £1000 per year	3.4a





## 10. Monitoring and evaluation

This management plan aims to be a working document with space for new action and targets to be added, where appropriate. Annual evaluation of the plan will take place with a short report, infographics and progress information distributed through the local newspaper, via the AIG website and AIG Conservation’s social media. This information sharing will ensure the AIG are accountable for maintaining the National Park and upholding the strategic objectives set through this plan.

The annual analysis will be split into:

- Management plan implementation– have management actions been completed and outputs achieved?
- Performance monitoring– are the objectives being met through the management?

Annual evaluations will allow the AIG to improve the National Park’s management by learning from experience and progress through adaptive management as further information and funds

become available. The AIGCFD will continue to work with external partners to further our scientific knowledge about the flora and fauna of the National Park. Where necessary, new partnerships will be formed to close data gaps.

The Management Plan will have a detailed review every 5 years by AIGCFD in consultation with the Ascension Island community, external partners and funders with amendments incorporated for the following 5 years.

### Summary of monitoring activity

Description	Metric	Frequency
Climate change	Temperature, precipitation and cloud base height	Continuous
Visitor satisfaction	Number of visitors to National Park	Annual
	Reported satisfaction levels through questionnaires	Biennial
Public engagement	Number of people attending events and school visits	Annual
	Number of engagements with social media posts	Annual
Volunteer engagement	Number of volunteers assisting split by demographic group	Annual review
Land crab	Survey of land crab abundance along transects at main spawning beach	Annual
Endemic invertebrates	Barcoding of malaise trap samples for occurrence	Annual
Endemic vegetation	Continue biannual endemic plant census across sites within the National Park	Biannual

## Research priorities

An important principle of this management plan is that decisions will be based on the best available information. In reality there are large gaps in knowledge about Green Mountain and research effort will be focused on those gaps that are limiting effective management. These include:

### Baseline data

- Continued terrestrial invertebrate taxonomy
- Microhabitat and resource requirements of endemic invertebrates
- Habitat use and migration of land crabs
- Habitat requirements of endemic plants

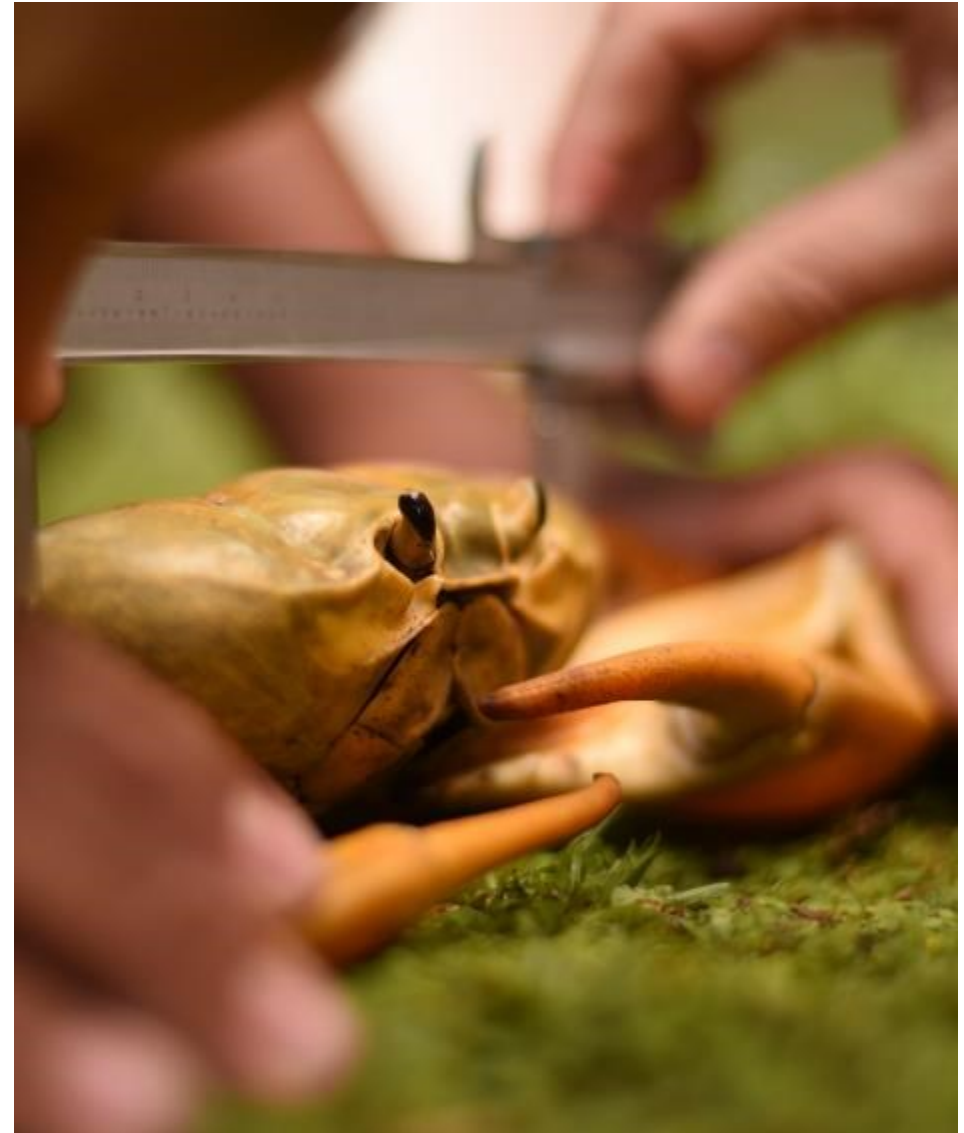
### Threat assessment

- The impacts of climate change on natural processes, species and ecosystems
- The extent and impacts of present plant and animal invasive species

### Improving management

- The best methods for controlling high priority plant non-native species
- The best methods to establish cultivated endemic plants in the wild as part of restoration efforts
- Establish what the Ascension community want from the National Park

Due to the limited capacity on Ascension, external partners and funding will be sought to complete this research. The aim will be to publish the results in peer-reviewed journals to ensure the research is of high quality and the findings robust.



## Appendix —Edible Plants in GMNP

Under the National Protected Areas Regulations, 2014, it is an offence to remove plants from the National Park without permission. This is essential to prevent damage to native plants or important habitats within GMNP, but would also have the effect of preventing anyone from taking edible plants from within the National Park. To allow people to forage within the National Park, the Administrator has granted permission for everyone on Ascension to take the edible plants on the list opposite from GMNP.

Permission to remove plants from the allotments within GMNP is granted when the Land Occupancy Permit is issued to the allotment holder each year.



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24<sup>th</sup> September 2021

National Protected Areas Ordinance, 2003

Green Mountain National Park Regulations, 2010

Permission to take edible plants from Green Mountain National Park

From the 24<sup>th</sup> September and until further notice, the Administrator grants permission, under regulation 3 of the Green Mountain National Park Regulations, 2010, for anyone on Ascension Island to take or intentionally destroy, disturb or damage any of the following plant species for the purpose of collecting food.

Common name/s	Scientific name
<b>Whole plants</b>	
Banana/ Banana tree	Musa sp
Taro/ Yam/ Elephant ear/ Eddoe, Malanga /Gabi, Avi,	Colocasia esculenta Colocasia antiquorum
Shell Ginger/ Pink porcelain lily/ variegated ginger/ butterfly ginger	Alpinia zerumbet
<b>Fruits of plant</b>	
Bramble/ Blackberry/Scaldhead	Rubus fruticosus
Guava/ Common guava/ Yellow guava/ Lemon guava.	Psidium guajava
Raspberry/ roseleaf bramble/ Mauritius raspberry/ thimbleberry/ Vanuatu raspberry/ Bramble of the Cape	Rubus nanus
Chow-chow/ Christophine, Vegetable Pear/ Chayote	Sechium edule
Wild tomato	Lycopersicon esculentum

Sean Burns  
Administrator, Ascension Island

## References

Canelas, J., Fish, R., Bormpoudakis, D., Smith, N. (2019) Cultural Ecosystem Services in the Ascension Island Final Report. Natural Capital Assessment. South Atlantic Overseas Territories (SAERI/University of Kent)

Wolfe, A. (2013). Ascension Island Cultural Heritage Survey. Wolfe and Associates report for AIG.

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Page 7 Ascension Spleenwort - AIGCFD, Parsley Fern - AIGCFD, Hedgehog grass - AIGCFD, Purple Fern - AIGCFD, Moss fern - AIGCFD, Feather Fern - AIGCFD

Page 8 Land Crab - Jonathan Holt, E. ascensionae - Adam Sharp, Fairy Tern - Steve Bowden

Page 9 Ficus - Matthew Stritch

Page 10 Red Lion art work - Jonathan Holt

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Page 12 Children - Vicky Knight, Shade houses - Vicky Knight

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