

EXECUTIVE COUNCIL

PUBLIC

Title:	Stanley Tussac Grass Islands Management Plan 2018-2023
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Report Author:	Environmental Officer and Policy Advisor
Portfolio Holder:	MLA Leona Roberts
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Previous papers:	None
List of Documents:	Stanley Tussac Grass Islands Management Plan 2018-2023

1. Recommendations

Honourable Members are recommended to approve:

- (a) The management plan for the Stanley Tussac Grass Islands of Kidney Island, Cochon Island, Top Island and Bottom Island.
- (b) To drop the £10 visitor fee to Kidney Island.
- (c) To drop the £50 visitor fee to all other islands owned by the crown.

2. Additional Budgetary Implications

- 2.1 A revenue loss of approximately £3,410.00 annually from the income of visitor fees to Kidney Island. At present the small Stanley Tussac Islands costs approximately £1,500.00 per annum to run, this includes the human resource time spent issuing permits, information given to visitors on printed leaflets, biosecurity footbaths and an annual monitoring trip to check the rodent bait boxes or check for rodents. The management plan envisions a carrying out a regular census of Sooty Shearwaters and White-Chinned

Petrels when reviewing the management plan which would approximately cost £5,000.00 (high-level estimate) and should a wildlife emergency or oiled wildlife emergency occur a contingency of approximately £12,000.00.

- 2.2 For all other islands owned by the crown the visitor fee of £50 has not brought in any additional revenue as this has always been dropped.

3. Executive Summary

- 3.1 This management plan has a vision to protect Kidney Island, Cochon Island, Top Island and Bottom Island for their unique wildlife and biodiversity for the Falkland Islands. The objectives of the management plan are to maintain and where practicable, enhance the wildlife and landscapes of the four islands, to ensure environmentally sustainable access to Kidney Island for education and tourism purposes for all visitors and to allow access to Cochon, Top Island and Bottom Island for research and conservation purposes only.
- 3.2 There are four tussac grass islands close to Stanley and all are in a relatively pristine state, either historically so or through changes in land-use practices and/or a programme of habitat restoration. Four globally threatened birds breed on some or all of the four islands; the Macaroni penguin, white-chinned petrel, Cobb's Wren and Southern Rockhopper penguin. Kidney Island is nationally important for the White-Chinned Petrel and Great shearwater and Bottom Island is also nationally important for the White-Chinned Petrel. The islands also provide tussac grass habitat for many other native species. Kidney Island in particular also provides a recreational opportunity for residents and visitors to the Falkland Islands and all four islands have considerable potential for environmental education. There is also significant potential for research on plants and animals of the tussac grass ecosystem because of the ease of access from Stanley compared to other mature rodent-free tussac grass islands in the Falkland Islands.
- 3.3 As part of the Falkland Islands Biodiversity Framework 2016 – 2030, goal C highlights that the majority of key sites are conserved by 2020 and that site specific management plans for FIG owned protected areas are produced. This plan aims to achieve this goal for the Kidney Island group. Kidney Island is an important site close to Stanley for environmental education and an opportunity to experience wildlife.
- 3.4 The plan highlights key threats to these islands including threats from livestock grazing/harvesting of tussac grass, physical damage and disturbance, human-caused fire, invasive species, research practices, plastic and oil pollution, natural disasters and wind and rain threats to the huts. Management actions to protect the natural environment from these threats were developed based on the islands best interest and the resources available to manage the islands. The management plan recognises that these islands are an incredible resource to the natural environment of the Falkland Islands as well as the Falkland Islands community.
- 3.5 Management actions within the management plan are targeted to each of the threat areas. Broadly these management actions control certain activities on the islands, such as grazing, limit the visitor numbers, to avoid disturbance and use tools such as information leaflets and the post-visit report form to raise awareness, prevent threats from occurring, promote good environmental stewardship and record any issues.

4. Background and Links to Islands Plan and Directorate Business Plan/s

- 4.1 The production of this plan is directly linked to the Islands Plan 2018-2022 where “During this assembly we will implement the 2030 Biodiversity Framework to preserve our natural environment” and links to the vision for the Falkland Islands Environment. It provides the policy background needed to undertake management actions to “ensure that the environment is preserved for future generations”.
- 4.2 The Biodiversity Framework 2016-2030 and the Falkland Islands Ecoregions, Habitats, Species and Sites Strategy 2016-2020 were agreed by Executive Council in 2016. Under the Ecoregions, Habitats, Species and Sites Strategy 2016-2020, Goal C highlights that “the majority of ‘key’ sites and areas are conserved by 2020”. One such key site is the Kidney Island Group, a government-owned National Nature Reserve and Important Bird Area. To ensure conservation of the area by 2020, a mechanism to achieve this is to “produce site specific management plans for FIG owned protected areas”.

5. Options and Reasons for Recommending Relevant Option

- 5.1 Option 1 (recommended): To approve the management plan as it is presented here including the acceptance of the action plan points. This action plan in response to the threats was developed in collaboration between FIG and the bodies making up the Environmental Committee. As such it has not only got the Committee’s endorsement but also has been reviewed by all key stakeholders which are represented on the Committee and have been involved in the development of the plan. The Committee recommends dropping the £10.00 visitor fee to Kidney Island. In 2016 the Environment Committee recommended to also drop the £50.00 fee for visits to outer islands. As this brings in no revenue it is recommended to also drop this fee.
- 5.2 Option 2: To approve the management plan and its action plan points but to not drop the £10.00 fee for future visits to Kidney Island.
- 5.3 Option 3: To not approve the management plan.

6. Resource Implications

6.1 Financial Implications

Fees are currently collected at a rate of £10 per head per visitor for visits not conducted for conservation, research or educational purposes. These fees amounted to £3,410 in 2017/18, the equivalent of one Environmental Studies Project. The recommendation which includes that fees are dropped to £0.00 will cause a loss of this revenue to FIG. Currently no revenue is collected from the £50 visitor fees to other crown-owned islands.

6.2 Human Resource Implications

None – permits are currently and will continue to be handled as part of the existing work load for the Environmental Officer and Policy Advisor.

6.3 Other Resource Implications

None

7. Legal Implications

7.1 The visitor fees to Kidney Island are currently charged in accordance with the Conservation of Wildlife and Nature Ordinance 1999. The herein proposed reduction of the fees for a permit to £0.00 would need to be amended in the Ordinance to reflect this change.

8. Environmental & Sustainability Implications

8.1 The Management Plan for the Stanley Small Tussac Grass Islands seeks to clearly define the management targets and aims for managing these islands in future. They are an incredible resource to the Falkland Islands biodiversity and this management plan seeks to protect and enhance this. As such all environmental implications are purely positive and geared towards preserving the environment of these islands for this and future generations.

9. Consultation

9.1 The Management Plan has been developed in consultation between FIG, the South Atlantic Environmental Research Institute, Falklands Conservation and other interested parties. The Plan was endorsed by the Environmental Committee where all stakeholders had an active role in its development.



Stanley Tussac Grass Islands Management Plan 2018 - 2023

Kidney Island, Cochon Island, Top Island and Bottom Island

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**Policy Unit
Falkland Islands Government
August 2018**

Vision

To protect Kidney Island, Cochon Island, Top Island and Bottom Islands for their unique wildlife and biodiversity for the Falkland Islands.

Objectives 2018 to 2023

1. To maintain and where practicable, enhance the wildlife and landscapes of the four islands.
2. To ensure environmentally sustainable access to Kidney, Cochon, Top and Bottom Island as an educational resource.

Adoption

This plan was approved by the Environmental Committee on 05/09/2018 and by Executive Council on XX.

Abbreviations

ACAP	Agreement on the Conservation of Albatross and Petrels
EC	Environmental Committee
ESB	Environmental Studies Budget
FC	Falklands Conservation
FIFD	Falkland Islands Fisheries Department
FIG	Falkland Islands Government
FITB	Falkland Islands Tourist Board
HBC	Historic Buildings Committee
IBA	Important Bird Area
NNR	National Nature Reserve
PVR	Post Visit Report
SMSG	Shallow Marine Surveys Group (Falklands)

Note:

The Stanley Tussac Grass Islands Management Plan documents the geological, biological and built heritage assets found on Kidney Island, Cochon Island, Top Island and Bottom Island.

The management plan covers a five year period between 2018 and 2023. The management of the four islands is the responsibility of the Falkland Islands Government (FIG) because Kidney Island and Cochon Island are a Crown-owned National Nature Reserve (NNR) and Top Island and Bottom Island are Crown land.

FIG has a limited budget and resources available for environmental management. Therefore all actions proposed in the plan were selected because they can be met by the current level of both funding and resources.

1. Introduction

Most if not all small islands in the Falkland Islands were once covered in tussac grass, free of invasive species and a haven for wildlife. Many islands have since been over-grazed and pest species such as rats have been accidentally introduced.

There are four tussac grass islands close to Stanley and all are in a relatively pristine state, either historically so or through changes in land-use practices and/or a programme of habitat restoration. Four globally threatened birds breed on some or all of the four islands; the Macaroni penguin, white-chinned petrel, Cobb's Wren and southern rockhopper penguin. Kidney Island is nationally important for the White-Chinned Petrel and Great shearwater and Bottom Island is also nationally important for the white-chinned petrel. The islands also provide tussac grass habitat for many other native species. Kidney Island in particular also provides a recreational opportunity for residents and visitors to the Falkland Islands and all four islands have considerable potential for environmental education. There is also significant potential for research on plants and animals of the tussac grass ecosystem because of the ease of access from Stanley compared to other mature rodent-free tussac grass islands in the Falkland Islands.

Kidney Island and Cochon Island lie approximately 500 m off the coast of East Falkland, at the southern entrance to Berkeley Sound, whilst Top and Bottom Islands are located on the southern side of Port William (Fig. 1). Kidney Island covers 32 hectares (1 ha = 100 m²), Cochon Island covers 8ha, Top Island

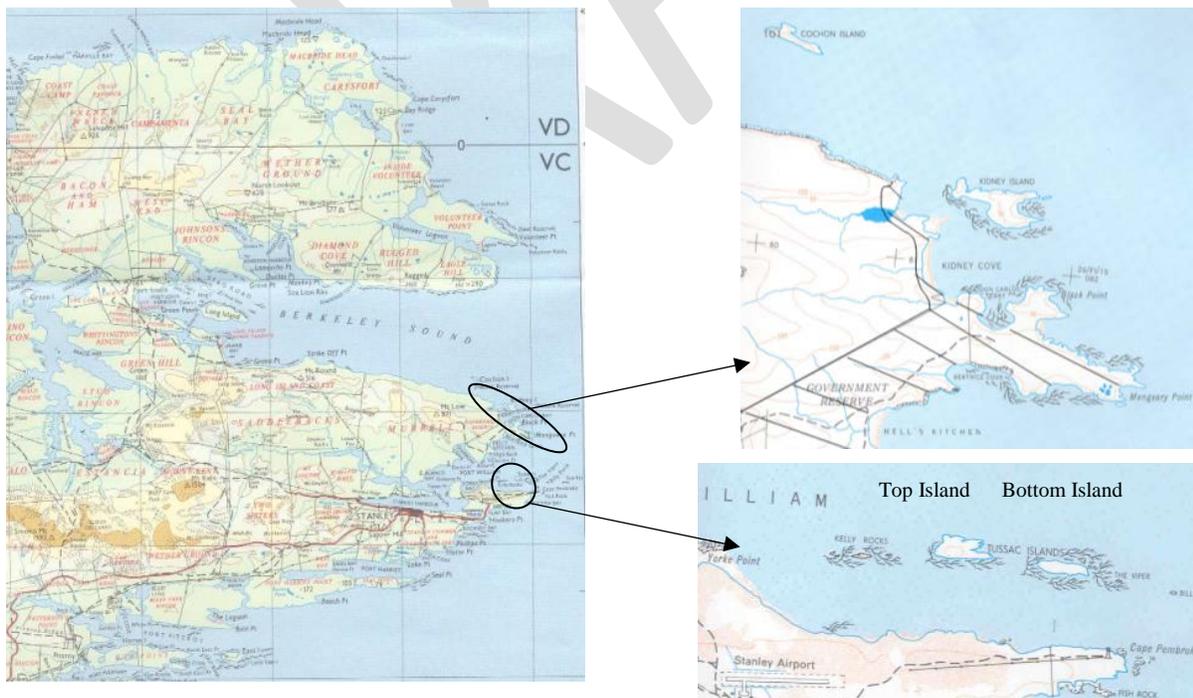


Figure 1: The location of Kidney Island, Cochon Island, Top Island and Bottom Island

covers 12 ha and Bottom Island is 8 ha. Kidney Island probably got its name from its shape, whilst Cochon is the French word for pig, perhaps named by the French settlers at Port Louis in 1764. This is probably because when viewed from the northeast, the profile of the island resembles two pigs back to back (Strange et al. 1998). All four islands are crown-owned.

As part of the Falkland Islands Biodiversity Framework 2016 – 2030, goal C highlights that the majority of key sites are conserved by 2020 and that site specific management plans for FIG owned protected areas are produced. This plan aims to achieve this goal for the Kidney Island group. Kidney Island is an important site close to Stanley for environmental education and an opportunity to experience wildlife.

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2. Key Threats

There are eight existing and potential threats to the biodiversity and built heritage on the four tussac grass islands:

1. Livestock grazing/harvesting of tussac grass
2. Physical damage and disturbance
3. Human-caused fire
4. Invasive species
5. Research practices
6. Plastic and oil pollution
7. Natural disasters
8. Wind and rain (huts only)

There is considerable knowledge of the terrestrial habitats for all four islands (please see the background below) and similarly the potential threats are well understood. Each threat is discussed in detail below.

2.1. Livestock grazing/harvesting of tussac grass

A return to the grazing or harvesting of tussac grass on any of the four islands would threaten the long-term survival of the tussac grass and peat soil structure necessary for the burrowing seabirds. However, the removal of some tussac grass tillers for replanting elsewhere is not considered to be a threatening process.

2.2. Physical damage and disturbance

Many of the species and habitats on the four tussac islands are sensitive to the physical presence of visitors. Those particularly sensitive include the burrowing seabirds, which may have their burrows blocked and/or destroyed, and southern rockhopper penguins and macaroni penguins, which may move off eggs and chicks.

2.3. Human-caused fire

Visitors may accidentally start fires on Kidney Island through cigarette butts, open fires, cooking stoves and candles because the vegetation on the four islands is dry and extremely flammable. Apart from a fire blanket in the hut on Kidney Island, there is no fire-fighting equipment on any of the islands. Due to the remote nature of the islands any fire-fighting requirements have to be assessed.

2.4. Invasive species

All four islands are free of all species recognised to be invasive in the Falkland Islands, except for some Prickly sow thistles on Kidney Island. However, the sow thistle scored relatively low in the overall risk assessment (Whitehead 2008). The introduction of a number of invasive plants and animals, such as

calafate, European earwig and rodents, onto the four islands threatens many of the native species, most particularly the Cobb's wren.

Potential transport paths for new organisms include in the clothing and luggage of visitors, zodiacs landing passengers and ships running aground (particularly for rodents getting ashore). Rodents could also potentially arrive to the islands via floating kelp clumps, in the claws of raptors and by swimming to these islands.

2.5. Research programmes

Any current monitoring programme, as well as all research projects, are licensed by the FIG under the Conservation of Nature and Wildlife Ordinance 1999; Any new applications for research on any of the four islands would be subject to the same licensing requirement.

2.6. Oil and plastic pollution

Seabirds and marine mammals around all Island are at risk from being harmed or killed by oil or plastic pollution from vessels. The threat of oil pollution, particularly of heavy oil, is significant and the chance is relatively high, given the amount of shipping in the area of the four islands. A National Oil Spill Contingency Plan is currently under development.

2.7. Natural Disasters

A number of natural disasters, such as a lightning strike starting a fire, wildlife diseases (e.g. avian pox or avian cholera) or a harmful algal bloom, could occur on any of the four islands. Often little can be done during such events. The FIG Fire and Rescue Service will respond to fires in camp where life and/or property are threatened. The Fire and Rescue Service has portable equipment for fighting fires in camp but their capacity is limited by air/sea access, the landscape of the site, access to water and the logistics of maintaining people at remote locations.

There have been few disease outbreaks reported in the Falkland Islands, with the most recent being avian pox in a small number of gentoo penguin colonies in the southwest of the Falkland Islands in 2006/07 and again in 2015/16 (Munro 2007, Crofts and Stanworth, 2016). There is a contingency plan under development in the Falkland Islands for the outbreak of wildlife diseases run by the Department of Agriculture, Policy Unit and Falklands Conservation. A member of the public suspecting a wildlife disease is asked to contact Falklands Conservation in the first instance. Wildlife diseases can be transmitted by both wildlife and visitors.

2.8. Wind and rain (huts only)

Both huts on Kidney Island and Top Island are affected by the wind and rain, which cause the wood to rot and warp. The huts require regular maintenance to repair and replace sections in order to prevent wildlife

accesses the huts and/or to allow safe usage by visitors. However, for the Kidney Island hut, any repairs should not threaten the historic look of the building, at least on the outside.

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3. Action Plan

3.1. Livestock grazing/harvesting of tussac grass

Action	Tasked to	Cost
1 No livestock grazing or harvesting of tussac grass on any of the islands.	FIG Environmental Officer	None

3.2. Physical damage and disturbance

Visitors must request permission to go to all four islands from the Policy Unit. Due to the closure of the office outside of normal working hours it is advised that visitors allow at least one working day to process the visit application. The maximum number of visitors reflects the Effective Carrying Capacity of Kidney Island (see table at end).

Action	Tasked to	Cost
2 Open day access by visitors to Kidney Island , max 14 visitors including one or two guides at any time on the island. This is flexible and can include another group of a maximum of 14 visitors if one group is a tourist group and the other is local and the weather conditions are suitable.	FIG	HR cost of issuing permits £9.25/permit
3 Overnight access to Kidney Island only for research reasons, maximum 14 visitors at any one time.	FIG	HR cost of issuing permits £9.25/permit
4 Selected day access to Cochon Island, Top Island and Bottom Island; decision made by the Environmental Officer	FIG	HR cost of issuing permits £18.50/permit
5 Awareness of and adherence to visitor permit conditions	Group Leader, FIG	Briefing and contact with group leader
6 All guides to Kidney to have read the Kidney Island guide leaflet and the recommendations given therein.	FIG, Group Leader	£0.40 per leaflet.

Visitor Carrying Capacity for Kidney Island was calculated as described below. This is following the review of several methods commonly employed. The method below was utilised due to its previous implementation in small islands. The factors deemed relevant for Kidney Island were the Accessibility (as not all terrains are suitable for each person), Social Correction factor (to account for any potential overcrowding between groups so all groups experience the uniqueness of Kidney Island), an Erosion factor (which takes into account that steep slopes such as those on Kidney Island may be at risk from erosion due to heavy foot traffic), Wildlife factor (To account for the presence of wildlife). Other factors such as extreme weather events and beach quality were deemed not relevant to Kidney Island.

Value Type	Value	Comment/Explanation of Calculation
Physical Carrying Capacity (area)	30,112.18	The Physical Carrying Capacity is calculated according to the method described by Bera et al. 2015. The area used for tourism (excluding the south eastern tip and the western part of the island) was calculated at 90,336.55 m ² . It was calculated that 1 worthwhile trip could be undertaken each day to experience the sooty shearwaters returning to their burrows at sunset. Each visitor would need approximately 3 m ² due to the dense coverage of tussac. Thus the total number of people on the island is the area available divided by the space each person needs.
Social Correction Factor	0.12	The Social Factor is calculated by each person needing 2 m distance (personal space on this tussac island when walking). It is calculated based on the path usually taken by groups being 820 m long and three groups walking this same path at the same time (taking into account the amount of time needed to get groups on and off launches and that each launch has space for 12 passengers. The average time spent walking the islands is usually around 1.5 hours and groups can be 30 minutes apart. The total distance to walk is 820 m (Google Earth) and so the total unused distance is 724 m. The social factor is “1-(unused distance/total distance)” according to Somarriba-Chang et al., 2006.
Erosion Factor	0.82	The erosion factor takes into account the total distance the path is at erosion risk so any steep slopes that, if walked on repeatedly, would be at risk from erosion. There are a total of 145 m of steep slope along the path (again using google earth). This factor is calculated using “1-(steep path/total path)” according to Somarriba-Chang et al., 2006.
Accessibility Factor	0.21	The steep part of Kidney Island (145 m) is considered difficult terrain and so gains a factor of 1.2, the other parts of Kidney Island are considered medium terrain so a factor of 0.7 is used. This is modified from Somarriba-Chang et al. 2006 to avoid negative values but still account for the fact that the terrain is treacherous.: “1-((1.2*difficult path+0.7*medium path)/total path)”, according to Somarriba-Chang et al. 2006

Wildlife Factor	0.4	This is calculated using the burrow density (1-burrow density) using burrow density as determined by Wakefield et al. 2017 of 0.6 burrows per m ² and methods according to Bera et al. 2015. Although there is other wildlife this factor is used as a proxy from the most populous species. It is recognised that other species such as passerines, pinnipeds, other seabirds and raptors are commonly found on Kidney Island too.
RCC	248.8953	The Real Carrying Capacity is the Physical Carrying Capacity multiplied by each of the factors deemed relevant for Kidney Island: Social, Erosion, Accessibility and Wildlife
MC	0.0558	The Management Capacity is usually difficult to calculate however, as infrastructure, personnel and equipment for management are very limited this was calculated similar to Aryasa et al. 2017. The sole resource is management staffing availability in unit time. Currently this equates to 0.25 FTE (the time the Environmental Officer, Policy Assistant spend on administrative activities. Though the management of Kidney Island is not the sole activity of the Environmental Officer the existence of this Management Plan and that of briefed guides for Kidney Island should be taken into account as well). Thus the management capacity is (37.5*0.25)/168. Or a Management Capacity of 5%.
ECC	13.88836	The effective carrying capacity is the Real Carrying Capacity multiplied by the Management Capacity.

These calculations were carried out using a precautionary approach due to the pristine environment of Kidney Island and to avoid disturbance to its wildlife by visitors.

3.3. Human-caused fire

Action	Tasked to	Cost
8 Smoking ban on all islands	FIG	None – contingency in case of fire.
9 Restriction of fuel stove use in huts on Kidney Island and Top Island and in rocky areas on Bottom Island only.	FIG	None – contingency in case of fire.
10 Maintenance of a fire blanket in Kidney Island hut	FIG	TBC

3.4. Invasive Species

Action	Tasked to	Cost
11 Awareness of and adherence to biosecurity conditions on	Group Leader, FIG	£54.70 for

	visitor permit		Virkon, £34.80 footbath
12	Adherence to the Kidney Island Biosecurity Plan including monitoring of bait stations on Kidney Island, Top Island and Bottom Island	FIG	£360 Kidney Island assessment trip
13	Visitors report new non-native species on PVR	Visitors	None
14	Control/eradication programme developed for new invasive species within 6 months of sighting, monitoring and reporting of Invasive Species by all visitors.	FIG	£360 boat trip plus eradication equipment

3.5. Research Practices

	Action	Tasked to	Cost
15	All research licence applications follow the FIG procedure	FIG	None
16	Research on Cochon Island only where remote surveying is not appropriate or possible	FIG	None
17	All scientists issued with visitor permit	FIG	HR cost of issuing permits £18.50/permit

3.6. Plastic and oil pollution

	Action	Tasked to	Cost
18	Presence of oil and oiled birds monitored by visitors using PVR	FIG, FC	
19	Implementation of National Oil Spill Contingency Plan where vessel grounds or oil is spilt near to the islands	FIG	None
20	Land visit to affected island(s) within 3 days of wreck/spill occurring	FIG	Approx . £10,00 0
21	Collection of marine debris from all islands by visitors on <i>ad hoc</i> basis and presence of litter monitored using PVR	Visitors	None

3.7. Natural Disasters

Action	Tasked to	Cost
22 Where there is an outbreak of a wildlife disease elsewhere in the Falkland Islands, access to the four islands is to be curtailed. As a precaution all visitors will disinfect their shoes at the Public Jetty.	FIG	£2000 minimum contingency
23 If a wildlife disease or toxic algal bloom is suspected, samples are collected for analysis	FIG, FC	Not known, possible overseas lab costs

3.8. Wind and rain

There is no intention in the management plan to maintain the hut on Top Island. However, people are welcome to undertake the works themselves with prior consent from the Environmental Officer. The Kidney Island hut will be maintained during the life of the management plan. The hut as of 2018, though not particularly structurally sound, is in good condition, with no holes, leaks or rotten floorboards. There are no/very little bird droppings and no rubbish.

Action	Tasked to	Cost
24 Awareness of and adherence to visitor permit conditions	FIG	No cost
25 Repair of all holes etc that develop in the Kidney Island hut	Organised by FIG, completed by volunteers	£200 during next five years, FIG

3.9. Legislation

Conditions of access to islands are given under the Conservation of Nature and Wildlife Ordinance 1999 for the four islands.

All visitors must obtain a permit from the Environmental Officer to visit all four islands. The conditions of the permit will be:

1. All parties to be aware of, and carry, a copy of the Countryside Code.
2. Access beaches and surrounding tussac areas may be occupied by southern sea lions, so extreme caution must be taken while landing and alternative routes to be taken if necessary.
3. No fires or naked flames, excepting the careful use of fuel stoves only in the hut.
4. Strictly no smoking on the island.

5. Extreme caution to be taken not to trample the burrows of nesting seabirds. Areas of high burrow density should be avoided. Be aware of unstable ground and take care when walking on slopes especially when the ground is wet.
6. Do not damage or mark the tussac cutters hut.
7. No species of plant or animal known to be invasive or otherwise detrimental shall be knowingly taken to the islands.
8. Food must be stored in airtight containers and thoroughly checked before leaving the vessel.
9. Ensure boots are clean and disinfected before going ashore.

10. A Post Visit Report form should be completed and returned to Policy and Economic Development office.
11. A study into Sooty Shearwaters was established in January 2013. Please do not disturb the canes and markers around burrows on the west side of the landing bay.
12. A number of precautionary rodent bait stations have been placed on the island in line with the Island Biosecurity Plan (see photo below). These are small wooden boxes with a white lid with text. Please do not touch or disturb these stations.

For additional safety it is advised that:

12. A two-metre set or mobile phone be carried and a contact arranged in case of emergency.
13. All persons requiring access to be physically fit, given that access is off launches/ zodiacs and across rocky beaches.

Action	Tasked to	Cost
26 Designate Top Island and Bottom Islands as a NNR	FIG	None

3.10. Review of the Management Plan

Action	Tasked to	Cost
27 Five-year review in 2022 of the Management Plan, including annual reviews of PVRs	FIG	None
28 Carry out a census of both Sooty-shearwaters and White-Chinned Petrels to complement the management plan review.	FIG	Approx. £5,000

4. Background

4.1. Designations

Kidney Island, Cochon Island and Top Island and Bottom Island are owned and managed by the Falkland Islands Government (FIG) with the Policy Unit responsible for the management of reserved government land. Kidney Island and Cochon Island were declared a Wildlife Reserve on the 23rd of October 1964, and in 1999, in accordance with the Conservation of Nature and Wildlife Ordinance 1999, the reserve was re-designated as a National Nature Reserve (NNR). The Order for Kidney Island and Cochon Island states that indigenous flora and fauna should be protected and, under suitable conditions and control, research can occur. The Tussac cutters' Hut on Kidney Island is also designated a building of special architectural and historic interest. As part of the Stanley Tussac Grass Islands Management Plan, it is proposed that Top Island and Bottom Island are managed jointly with Kidney Island and Cochon Island in one plan because of their similar environments and physical proximity to each other.

Kidney Island and Cochon Island are also recognised as an Important Bird Area (IBA) - Site FK009 - in the Falkland Islands. The IBA status is issued under a programme co-ordinated by BirdLife International, and IBA listing has no international or national legality other than the recognition of the site for its global importance to wildlife. The Kidney Island Group is also a BirdLife Key Biodiversity Area.

4.2. Climate

The climate at the four tussac grass islands is likely to be similar to that experienced nearby in Stanley. There is persistent westerly wind, averaging 15 knots and cool air temperatures ranging from an average of 2°C in winter to approximately 8°C in summer and rainfall rarely exceeds 400mm annually.

4.3. Geology assets

The region is part of the Port Stanley Formation, dating from the late Devonian age and consisting mainly of quartz sandstone (Aldiss and Edwards 1999). There are no international, national or local geological assets found on any of the four islands.

4.4. Marine environment

At a distance of 500 m from shore, the ocean off East Falkland Island is more than 40 m in depth. Directly around the four islands, the water depth is 3 – 20 m. The offshore environment is an important foraging ground for sei and minke whales as well as for southern sea lions, Peale's and Commerson's dolphins and other wildlife.

The shallow marine environment is a critical part of the biodiversity of Kidney Island, Cochon Island, Top Island and Bottom Island. However, shallow marine habitat has not been studied comprehensively in the Falkland Islands but it is currently the subject of study by the non-governmental organisation Shallow

Marine Surveys Group (SMG). The shallow marine environment around Kidney Island and Cochon Island is important for a number of marine invertebrates, birds such as the endemic Falklands steamer duck, rock shags, Commerson's dolphins and Peale's dolphins.

4.5. Terrestrial Environment

The Falkland Islands landscape is classified into 21 habitat types (Broughton 1999, Upson 2012), three of which occur on the four tussac grass islands. Kidney Island, being the largest of the four islands, has the most number of plants and animals within each habitat.

4.5.1. Littoral sediments

This habitat type stretches from the upper margin of the littoral zone to the lower margin (Fig. 2). Species found on Kidney Island in this habitat include *Colobanthus quitensis* and *Crassula moschata*. On all four islands, this zone is fairly narrow due to the sea conditions.

4.5.2. Maritime rock, shingle, cliff and slope

This habitat type is located above the high water mark, but within the reach of the sea-spray. On all four islands, the rocky coastline supports a range of terrestrial and marine plants, invertebrates and animals. The shingle beaches are the foraging grounds for the Cobb's wren, tussac bird and oystercatchers. Southern rockhopper penguins, rock shags and king shags breed on the cliff areas.

4.5.3. Tussac grass

Tussac grass (*Poa flabellata*) is the dominant habitat type on all four islands, with stands up to 2.5 m in height (Fig. 2). The grass, *Carex trifida*, a common associate species is found amongst this habitat. Due to the rocky nature of Cochon Island, soil layers are thin and there is only low, but still dense, tussac grass habitat along the backbone and in parts on the southwest side.

Due to tussac grass cutting activities on Kidney Island from 1915 to the 1930s, most of the eastern part of the island was bare of tussac grass. However, by the 1960s, tussac grass had recovered and covered much of the island. There are small areas on both Kidney Island and on Top Island where limited tussac grass coverage is noted.

Natural fires caused by lightning strikes are a natural process on the Falkland Islands. The fire history on the four islands is not well known. There is no evidence of fires on Cochon Island. The most recent fire on Kidney Island occurred in the 1940s to the south of the hut, which was probably not covered by tussac grass at the time (Strange et al. 1988). Both Top Island and Bottom Island were set on fire during the Falklands Conflict in 1982. Fortunately, in both cases, burning was superficial; although the stands were completely burnt over, there was no evidence of fire going underground and destroying the peat layers.

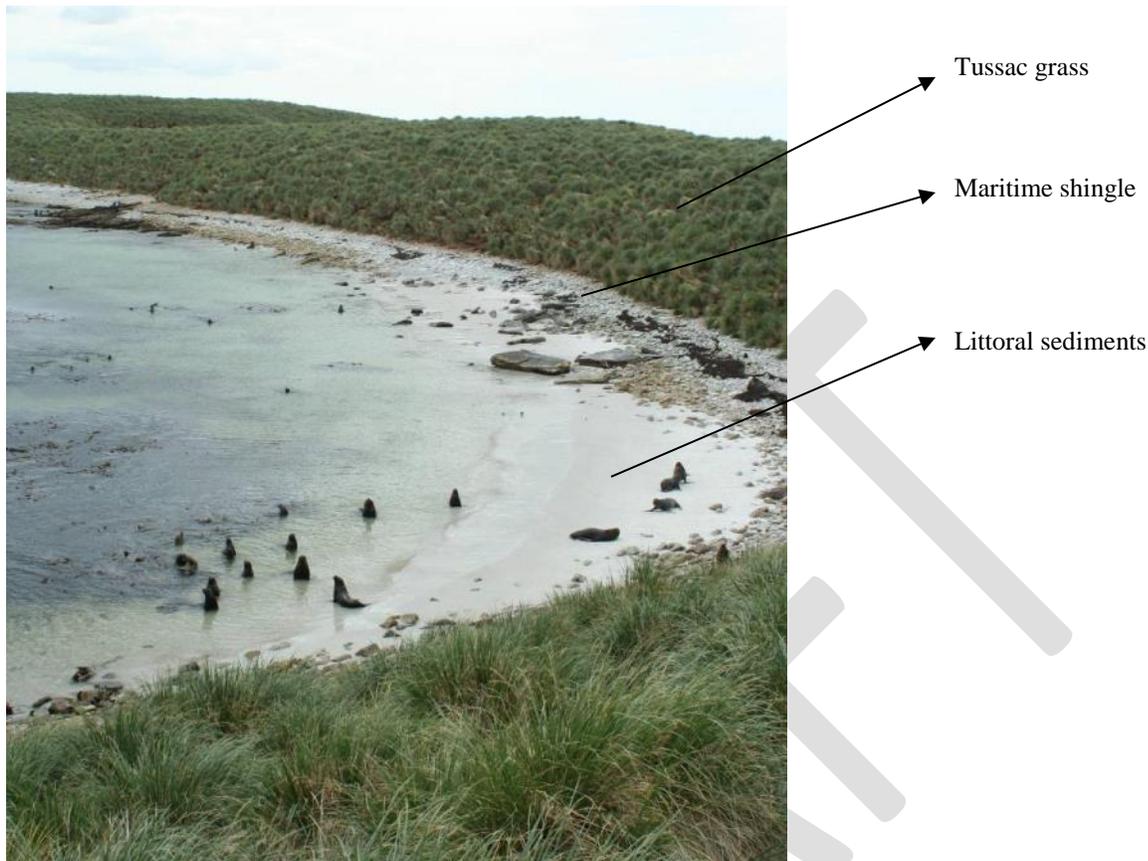


Figure 2: The terrestrial habitats as seen on Kidney Island.

4.5. Lower plants

A number of lichen, moss and fungi surveys have been carried out at various sites around the Falkland Islands during the last 150 years, but no specific surveys have been conducted at any of the four islands (Engel 1990; Watling 2002; Ochyra and Broughton 2004).

4.6. Higher plants

There have not been any detailed plant surveys on Cochon Island, Top Island or Bottom Island. On Kidney Island, a total of 35 plant species are recorded, including 35 native and four introduced species (Table 1). This is not a considerably large flora, but is considered average for a small-sized island covered almost completely in mature tussock grass. There are two endemic species, the ragworts *Senecio littoralis* and *Senecio vaginatus*, both of which are relatively common across the Falkland Islands. No species protected under the Conservation of Nature and Wildlife Ordinance 1999 have been found so far on any of the four islands.

On Kidney Island, two introduced perennials have been found on the edge of the north cliffs near the rockhopper penguin colony: a single dandelion plant in 1999 and about 20 sow thistles in 2007 and again in 2008 and 2018.

Table 1: Plants found on Kidney Island by Robin Woods during various visits over four decades and their status, including the Falklands Red List status (Broughton and McAdam, 2002).

Scientific name	English name	Status	Falklands conservation status
<i>Agrostis magellanica</i>	Fuegian bent		
<i>Apium australe</i>	wild celery		
<i>Aster vahlII</i>	marsh daisy		
<i>Baccharis magellanica</i>	christmas bush		
<i>Blechnum magellanicum</i>	tall fern		
<i>Blechnum penna-marina</i>	small fern		
<i>Callitriche antarctica</i>	Antarctic starwort		
<i>Cardamine glacialis</i>	bitter cress		
<i>Carex trifida</i>	sword-grass		
<i>Colobanthus subulatus</i>	emerald bog		
<i>Crassula moschata</i>	native stonecrop		
<i>Deschampsia flexuosa</i>	wavy hair-grass		
<i>Empetrum rubrum</i>	diddle-dee		
<i>Galium antarcticum</i>	Antarctic bedstraw		
<i>Gaultheria pumila</i>	mountain berry		
<i>Gunnera magellanica</i>	pigvine		
<i>Hieracium antarcticum</i>	Antarctic hawkweed		
<i>Hierochloa redolens</i>	cinnamon grass		
<i>Isolepis cernua</i>	nodding club-rush		
<i>Juncus scheuchzerioides</i>	native rush		
<i>Leptinella scariosa</i>	buttonweed		
<i>Luzula alopecurus</i>	native woodrush		
<i>Myrteola nummularia</i>	teaberry		
<i>Nertera granadensis</i>	beadplant		
<i>Olsynium filifolium</i>	pale maiden		
<i>Poa flabellate</i>	tussac grass		
<i>Poa pratensis</i>	smooth-stalked meadow-grass	Introduced	
<i>Pratia repens</i>	creeping berry-lobelia		
<i>Ranunculus biternatus</i>	Antarctic buttercup		

<i>Rostkovia magellanica</i>	Short Rush		
<i>Rubus geoides</i>	native strawberry		
<i>Rumex acetosella</i>	sheep's sorrel	Introduced	
<i>Senecio littoralis</i>	woolly Falkland ragwort	Endemic	Least concern
<i>Senecio vaginatus</i>	smooth Falkland ragwort	Endemic	Least concern
<i>Sonchus oleraceus</i>	sow thistle	Introduced	
<i>Taraxacum officinale</i>	dandelion	Introduced	

4.7. Invertebrates

Of the four islands, invertebrate surveys were carried out on Kidney Island in 2002. Analysis of the collected species is yet to be finalised but no species of conservation concern were found (A. Jones, personal communication). Due to their historical rat free status, both Kidney Island and Cochon Island should have a diverse abundance of terrestrial invertebrates, which an important part of the diet of many of the land birds, including Cobb's wren and the short-eared owl.

4.8. Birds

Bird surveys have been conducted on all four islands, although the type and number of surveys conducted varies between the islands. The birdlife on Kidney Island is the best documented of the four islands (Woods 1970b). Thirty-two species of birds have been recorded as recent or regular breeders on Kidney Island, including several key Falkland species and important colonies of penguins and burrowing petrels (Table 1).

Three endemic birds are found on Kidney Island and Cochon Island: Cobb's wren, Tussac bird and Falklands steamer duck. Four species that breed on Kidney Island are globally threatened. The Cobb's wren, white-chinned petrel, southern rockhopper penguin and Macaroni penguin are categorised as being vulnerable, whilst the Magellanic penguin has a near threatened conservation status. All bird species found at Kidney Island and Cochon Island, except the upland goose, are fully protected under the Conservation of Nature and Wildlife Ordinance 1999.

4.8.1. Seabirds

Kidney Island is the only confirmed breeding site outside of the Tristan Da Cunha/Gough Island Group for the great shearwater (Woods 1970a). The population was estimated by Woods and Woods (1997) to be no more than 15 pairs, which breed in burrows at the western end of the island.

In the Falkland Islands, white-chinned petrels breed at Kidney Island, Bottom Island and New Island, although some likely islands are yet to be surveyed (Reid *et al.* 2007). The species breeds in much larger numbers at South Georgia and the French sub-Antarctic islands but the population in the Falkland Islands

remains an important genetic reserve. The white-chinned petrel is listed and protected under the Agreement on the Conservation of Albatross and Petrels (ACAP).

Reid *et al.* (2007) suggest that there are no more than 40 pairs of white-chinned petrel on Kidney Island. However, 123 white-chinned petrels were found washed ashore in Landing Bay in October 2000, including two that had been banded on Kidney Island in 1987 (R. Woods, personal communication). Two occupied burrows were located on Bottom Island in 2005, although it is not known if the species bred on the island prior to rats being eradicated in 2001. Burrows were located on Top Island in 2012. No burrows were located on Cochon Island.

Most burrows on Kidney Island and Bottom Island were located on south facing slopes and burrow entrances were often more damp than adjacent sooty shearwater burrows (Reid *et al.* 2007).

Sooty shearwaters breed at approximately 20 sites in the Falkland Islands, with the largest colony on Kidney Island (Woods and Woods 1997). There are also many burrows on Cochon Island (T. Reid, personal communication record for 2006) and on Top Island (S. Poncet, personal communication record for 2008). Surveys on Top and Bottom Island indicate a marked increase in Sooty Shearwaters, in the order of thousands of pairs breeding on each of these islands.

In the 1960s, the sooty shearwater population on Kidney Island was estimated to be at least 500 breeding pairs, mostly on the far western headland, where the tussac grass was most extensive (Woods 1975). However, with the extension of tussac grass to the remainder of the island by the 1990s, burrows are now found across Kidney Island, with an estimated 139,000 breeding pairs (Wakefield *et al.*, 2017). Breeding birds arrive in October and they and their chicks depart in April, migrating as far north as Canada.

Interspersed along the coastal fringe with the burrows of these two species on all the islands except Cochon Island are those of Magellanic penguins. Counting the number of breeding pairs of Magellanic penguins in the Falkland Islands is difficult due to their deep burrows in the mature tussac grass.

There are 35 rockhopper penguin colonies across the Falkland Islands, including colonies on Kidney Island and Cochon Island. Historically, a large colony of rockhopper penguins was reported for Kidney Island, with as many as 85,000 eggs being collected during 1911 (Woods and Woods 1997). However, the current population is much reduced (Table 2).

Table 2: The numbers of eggs taken or pairs of rockhopper penguins recorded at Kidney Island (Woods and Woods 1997; Huin 2007a)

Date	Kidney Island	Cochon Island	Count made of
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1911	85,000		Eggs
1914	25,000		Eggs(Cawkell)
1917	15,000		Eggs(Cawkell)
1930	9,500		Eggs(Cawkell)
1932	12,000		Pairs
1934	7,000		Eggs(Cawkell)
1936	5,000		Eggs(Cawkell)
1952	1,000		Eggs(Cawkell)
1960	3,000		Pairs
1983	600		Pairs
1990	24		Pairs
1995	100	515	Pairs
2000	257	264	Pairs
2005	253	384	Pairs
2010	293	552	Pairs
2017	264		Pairs

One to five pairs of breeding macaroni penguins are found at 19 rockhopper penguin colonies in the Falkland Islands, including one pair on Kidney Island (Huin 2007a). Rock shags and black-crowned night herons also breed on the cliffs on Kidney Island, Cochon Island, Top Island and Bottom Island, with several hundred king shags breeding amongst the rockhopper penguins on Cochon Island.

The seabirds that breed on the four islands generally feed during the summer on the shelf area (up to 400 km away), with rock shags, king shags and Falklands steamer duck found no more than five to 12 km offshore (Pütz et al. 2003; White et al. 2002). During winter, rockhopper penguins migrate to southern Brazilian waters (Pütz et al. 2002) and sooty shearwaters and great shearwaters travel as far north as Newfoundland via the Caribbean (Woods and Woods 1997).

4.8.2. Songbirds

Dedicated breeding bird surveys have only been carried out on Kidney Island, with eight of the nine native songbirds in the Falkland Islands currently breeding there. The endemic Cobb's wren breeds on Kidney Island (Woods 2000). Also breeding on Kidney Island are the tussac bird, dark-faced ground tyrant, Falkland pipit, Falkland grass wren, Falkland thrush and black-throated finch, which are all Falklands endemic sub-species.

Songbirds on the island are likely to be Falklands endemics. ; Of 17 male grass wrens banded on Kidney Island in 1995, ten were sighted again the following year, eight for next two years, five the year after and none five years later (Kroodsma et al. 2002).

Kidney Island is at the most easterly distribution of the Cobb's wren. Density is relatively high, with at least six territory-holding males in a 1.45 ha sample plot on the island (Woods 1993).

There have been no detailed bird surveys on Cochon Island; the Cobb's wren has not been reported for this island, perhaps due to the lack of suitable cobbly beaches for foraging. During post-eradication surveys on Top Island and Bottom Island in the winter of 2004, dark-faced ground tyrants, grass wrens, Falkland thrushes, tussac birds and black-chinned siskins were recorded. There was also a report of Cobb's wrens breeding on Bottom Island in January 2004 (Falklands Conservation 2004).

4.8.3. Raptors

A number of raptors breed on the four islands, with turkey vultures, striated caracaras and shorted-eared owls all breeding on Kidney Island (Table 3). Raptors breeding on these islands probably roam afield to foraging grounds, although home range sizes of the species have not been investigated in the Falkland Islands. Turkey vultures tagged in Stanley have been sighted on Kidney Island.

Table 3: Historical and current breeding bird species for Kidney Island, based on records from Woods and Woods (1997) and R. Woods, personal communication.

Scientific name	English name	Falklands status	Global conservation status
<i>Anas sibilatrix</i>	Chiloe wigeon		
<i>Anthus correndera grayi</i>	Falkland pipit	Sub-species	
<i>Asio flammeus sanfordi</i>	short-eared owl	Sub-species	
<i>Caracara plancus</i>	southern caracara		
<i>Carduelis barbata</i>	black-chinned siskin		
<i>Cathartes aura jota</i>	turkey vulture		
<i>Chloephaga hybrida malvinarum</i>	kelp goose	Sub-species	
<i>Chloephaga picta leucoptera</i>	upland goose	Sub-species	
<i>Chloephaga rubidiceps</i>	ruddy-headed goose		
<i>Cinclodes antarcticus antarcticus</i>	tussacbird	Sub-species	
<i>Cistothorus platensis falklandicus</i>	grass wren	Sub-species	
<i>Eudyptes chrysocome</i>	southern rockhopper penguin		Vulnerable
<i>Eudyptes chrysolophus</i>	macaroni penguin		Vulnerable
<i>Garrodia nereis</i>	grey-backed storm-petrel		
<i>Haematopus ater</i>	blackish oystercatcher		
<i>Haematopus leucopodus</i>	Magellanic oystercatcher		
<i>Melanodera melanodera melanodera</i>	black-throated finch	Sub-species	

<i>Muscisaxicola maclovianus</i>	dark-faced ground-tyrant	Sub-species	
<i>Nycticorax nycticorax falklandicus</i>	black-crowned night-heron	Sub-species	
<i>Pelecanoides urinatrix berard</i>	common diving petrel	Sub-species	
<i>Phalacrocorax atriceps albiventer</i>	king shag	Sub-species	
<i>Phalacrocorax magellanicus</i>	rock shag		
<i>Procellaria aequinoctialis</i>	white-chinned petrel		Vulnerable
<i>Puffinus gravis</i>	great shearwater		
<i>Puffinus griseus</i>	sooty shearwater		
<i>Spheniscus magellanicus</i>	Magellanic penguin		Near threatened
<i>Sturnella loyca falklandica</i>	long-tailed meadowlark	Sub-species	
<i>Tachyeres brachypterus</i>	Falkland steamer duck	Endemic	
<i>Troglodytes cobbi</i>	Cobb's wren	Endemic	Vulnerable
<i>Turdus falcklandii falcklandii</i>	Falkland thrush	Sub-species	

4.9. Marine mammals

Six species of marine mammal have been sighted in the waters surrounding the four islands (Table 4). All marine mammal species in the Falkland Islands are fully protected under the Marine Mammals Ordinance 1992. The sei whale has listed globally as endangered by the International Union for the Conservation of Nature, while Commerson's dolphin and Peale's dolphin are data deficient.

Table 4: Marine Mammals sighted at the four islands.

Scientific name	Common name	Global conservation status
<i>Balaenoptera bonerensis</i>	Minke whale	
<i>Balaenoptera borealis</i>	Sei whale	Endangered
<i>Cephalorhynchus commersonii</i>	Commerson's dolphin	Data deficient
<i>Lagenorhynchus australis</i>	Peale's dolphin	Data deficient
<i>Mirounga leonina</i>	Southern elephant seal	Least Concern
<i>Otaria flavescens</i>	Southern sea lion	Least Concern

4.9.1. Pinnipeds

In the Falkland Islands, the southern sea lion breeds at 31 sites, with 2,747 pups recorded in 2003 (Thompson et al. 2003). There is a report of one pup being produced at Kidney Island in 2005 (A. Henry, personal communication), three pups were seen at Cochon Island in 2006 (N. Huin, personal communication) and there has been the occasional report of pups on Bottom Island (Strange et al. 1988).

The nearest large sea lion colony is located in the Diamond Cove/Rugged Hill area on the northern coastline of Berkeley Sound, with 19 pups recorded in 1995 (Thompson et al. 1995). Sea lions in the Falkland Islands generally feed on the shelf area up to 45 km from shore adjacent to breeding and resting sites (Thompson et al. 1998).

All four islands are important resting grounds for both sea lions and elephant seals. Usually there are between two and 60 sea lions present along the shores of Landing Bay and Dix's Cove and in the tussac grass and up to ten southern fur seals on Landing Bay on Kidney Island (FIG Post Visit Report data and anecdotal reports).

4.9.2. Cetaceans

Commerson's dolphin and Peale's dolphin are often seen near to all four islands. Commerson's dolphins generally stay within 10 km of the coastline, whilst Peale's dolphins are found both in coastal and offshore areas (White et al. 2002).

Minke whales and sei whales are seen during late summer and into autumn in the deeper waters off from Kidney Island and Cochon Island, and also from Top and Bottom Islands to a lesser extent. On occasion other, less common, baleen Whales such as Southern Right Whales have been sighted in Berkeley sound and Port William.

4.10. Built Heritage

There are no built structures on Cochon Island and Bottom Island. On Top Island, there is timber frame hut covered with vinyl and wiggly tin (Fig. 3). In 2004, it was full of pallets and in a fairly bad state of repair (D. Christie, personal communication). The history of this hut is not known.

On Kidney Island, a small hut was erected in the tussac grass above Landing Bay in the early 1930s for the use of individuals harvesting tussac grass and penguin eggs (Fig. 4). This hut is a listed building and of national significance.

More recently, the hut has been used by scientists, tourists and photographers. The hut has two bunks, a table and an old wood stove, which is no longer used. A fire blanket was added to the hut in 2007.



Figure 3: Hut on Top Island, April 2008



Figure 4: The hut on Kidney Island

The Historic Buildings Committee (HBC) has listed the hut on Kidney Island in 2016.

4.11. Land-use management

4.11.1. Historical use

There are no historical records of people landing on or using Cochon Island for any purposes, probably due to the lack of accessible landing sites and the island's small size. Both Top Island and Bottom Island have been stocked with cattle and tussac grass was cut during the 1900s to 1940s (see photo in Wolsey 1990) and perhaps beyond. In recent times, the islands have not been used.

Historically and currently, Kidney Island has been more often used than the three other islands. Up until the late 1950s, tussac grass and the eggs of rockhopper penguins were harvested. Tussac grass was cut

almost everywhere on the island, but most particularly on the north side of the central ridge where the tussac was taller due to moister ground. The normal practice was for a few men to cut between 300 and 600 13 kg bundles, spending up to four days living in the hut. During the period 1939 – 1945, there was also intermittently a cow, calf and hens present and unsuccessful potato plantings near the hut.

4.11.2. Research programmes

There have not been any programmes of research on Top and Bottom Islands. Scientists from Falklands Conservation counted the rockhopper penguins on Cochon Island in 2000/01 and again in 2010 when 553 pairs were reported and both the penguins and petrels on foot in 2005/06. On Kidney Island, there have been many and varied scientific research programmes and collections made since 1908, being more recently for plants, invertebrates, grass wren song and foraging behaviour of sooty shearwaters.

Various species of bird have been banded on Kidney Island since 1957, mostly sooty shearwaters (Table 6). However, only seabirds banded post 1986 are thought to be alive. The burrows of the currently studied sooty shearwaters are all located on a small area on the southern slope of the northern section of Kidney Island, away from the usual route taken by visitors. Falklands Conservation ringed 12 White-chinned petrels as part of a GLS tracking project in 2014.

The monitoring and research programmes conducted after 1999 were licensed under the Conservation of Nature and Wildlife Ordinance 1999 by FIG. A research licence is only issued where the proposed methodology is ethical, and the costs/effects of the research are outweighed by the value of the new information gained for the improved management of Kidney Island or of the species in the Falkland Islands or further afield.

4.11.3. Rodent Eradication programmes

In September 2001, a Norway rat eradication attempt was made, using 31 and 23 bait stations on Top Island and Bottom Island, respectively. Rodent poison (PestOff 20R) was replaced in each bait station for 11 days, when no more bait was taken (Brown et al. 2001). About 20 kg of bait was used on Top Island (1.6 kg/ha), compared with only 4.6 kg on Bottom Island (less than 0.6 kg/ha). Both islands were declared rat free in 2004 after three years of checks using oil-soaked gnaw sticks.

4.11.4. Tourism

There has been a significant rise in the number of recreational visits to the four islands during the last 30 to 40 years due to the increase in the amount of free time available to residents of the Falkland Islands and the number of overseas visitors and scientists. There is an annual school trip to Kidney Island. Access to the islands is by boat from Stanley Harbour.

Since the inception of the Conservation of Nature and Wildlife Ordinance in 1999, FIG has been responsible for the management of the four islands. The key management action has been through controlling visitor numbers and the reasons for visiting. Access to Cochon Island, Top and Bottom Island is limited to essential scientific work, although no other types of visitors, e.g. wildlife enthusiasts, have requested permission to land.

All visitors require a permit to visit the islands. The general rule in the past has been a maximum of 14 visitors including one or two guides (if needed) ashore at any time and access is granted on a first come, first served basis. The permit is issued with visitor behaviour conditions and the group leader is responsible for ensuring that all members of the group understand and follow the visitor conditions. A local certified guide is required to accompany any first-time visitors to the island. The permit includes the condition that a post-visit report form must be completed.

The permit states the dates the permit is valid for and the number of people allowed ashore. The conditions of the visit permit are:

1. All parties to be aware of, and carry, a copy of the Countryside Code (see below).
2. Access beaches and surrounding tussac areas may be occupied by southern sea lions, so extreme caution must be taken while landing and alternative routes to be taken if necessary.
3. No fires or naked flames, excepting the careful use of fuel stoves only in the hut.
4. Strictly no smoking on the island.
5. Extreme caution to be taken not to trample the burrows of nesting seabirds. Areas of high burrow density to be avoided. Be aware of unstable ground and take care when walking on slopes especially when the ground is wet.
6. Do not damage or mark the tussac cutters hut.
7. No species of plant or animal known to be invasive or otherwise detrimental shall be knowingly taken to the islands.
8. Food must be stored in airtight containers and thoroughly checked before leaving the vessel.
9. Ensure boots are clean before going ashore.
10. A Post Visit Report form should be completed and returned to POLICY UNIT office.
11. A study into Sooty Shearwaters has been established in January 2013. Please do not disturb the canes and markers around burrows on the west side of the landing bay.
12. A number of precautionary rodent bait stations have been placed on the island in line with the Island Biosecurity Plan (see photo below). These are small wooden boxes with a white lid with text. Please do not touch or disturb these stations.

For additional safety it is advised that:

1. A two-metre set or mobile phone be carried and a contact arranged in case of emergency.

2. All persons requiring access to be physically fit, given that access is off launches/ zodiacs and across rocky beaches.

The Falkland Islands Countryside Code

1. Always ask permission before entering private land.
2. Keep to paths wherever possible. Leave gates open or shut as you find them.
3. Be aware of the high fire risks throughout the Islands. Be extremely careful when smoking not to start fires. Take cigarette butts away with you.
4. Do not drop litter*. Take your rubbish home with you.
5. Do not disfigure rocks or buildings.
6. Do not touch, handle, injure or kill any wild bird or other wild animal*.
7. Never feed wild animals.
8. Always give animals the right of way. Remember not to block the routes of seabirds and seals coming ashore to their colonies.
9. Try to prevent any undue disturbance to wild animals. Stay on the outside of bird and seal colonies. Remain at least 6 m (20 ft) away. When taking photograph or filming stay low to the ground. Move slowly and quietly. Do not startle or chase wildlife from resting or breeding areas.
10. Some plants are protected and should not be picked*. Wildflowers are there for all to enjoy.
11. Whalebones, skulls, eggs or other such items may not be exported from the Falkland Islands*. They should be left where they are found.

* Such actions (with a few special exceptions) may constitute an offence in the Falkland Islands and could result in fines up to £4,000.



Falkland Islands Government

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FIG ISLAND VISIT REPORT

Island Visited:			
Visit Organiser/ Name:	Vessel Name:	Master's Name:	Vessel type: Ship Yacht Launch/inflatable
Date of visit:	Number of people ashore:	Time first people landed:	Time last people depart site:
Reason for visit/special interest groups (if any):			
Notes eg about beach litter, net-entangled wildlife, dead birds or seals, introduced weeds* or other unusual sightings:			
* If you see any introduced weeds such as thistles, please hand pull any plants that you can and bring them to Stanley for disposal.			
Sites visited - see permit form for locations	Yes/No	Comments	
Wildlife seen			
	Yes/No	Numbers (e.g. 1, 2-10, 10+)	
Cobb's wren			
Tussacbird			
Falklands steamer duck			
Short-eared owl			
Crested caracara			
Sea lion - where possible, count			
Elephant seal			
Commerson's dolphin			
Peale's dolphin			
Oil pollution			
Oil on coastline			
Oil seen offshore			
Oiled wildlife			

Signature (Visit Organiser)

Date

If you wish to conduct formal nature surveys, you can complete a Breeding Birds Survey form or a Cetacean Watch sighting form. Forms are available from FIG Environmental Planning Department or Falklands Conservation.

Records of visitor permits are available for 2001 onwards, although it was not known, until the use of PVRs, whether all permitted trips were actually undertaken and the number of people licensed on the permit actually landed on the island. There has been only one request to land on the Top Island and Bottom Island, apart from trips associated with the eradication attempt and post-eradication checks.

Most visitors came by commercial launch to Kidney Island, which generally carry up to 12 fare-paying clients, and the remaining visitors came by yacht or a rigid inflatable boat (rib). Residents of the Falkland Islands and international visitors use the first two forms of transport, while a small number of locals have ribs. All visitors are landed in the Landing Bay opposite Kidney Cove. Both day and overnight visitors generally go along Landing Bay, up the tussac grass to the hut and across the top of the island to the eastern cliffs where the rockhopper penguins breed. Overnight visitors tend to visit the entire island, time permitting.

Overnight visitors stay in the hut or pitch tents nearby. Cooking occurs in the hut using fuel stoves. All water, food and supplies must be brought from Stanley and carried up through the tussac grass to the hut. There are no toilet facilities and visitors are expected to bury wastes, although the standards are not detailed on the visitor permit. There are two shovels in the hut on Kidney Island for such a purpose.

4.12. Air-use management

Kidney Island and Cochon Island are designated with the second highest category of protection from air travel. It is zoned as a very sensitive area with high risk of bird strike – not to be overflown by any aircraft below 1,500 ft except where operationally necessary. Kidney Island is also zoned with Top Island and Bottom Island in the Stanley air traffic flying regulations. Falkland Islands Government Air Service Islander planes may fly over Top Island and Bottom Island when descending into or ascending out of Stanley Airport. Air travel is not considered a process that threatens any of the four islands because of the strict flight restrictions in place.

4.13. Marine use management

4.13.1. Shipping activity

All four islands are close to shipping lanes due to their locations at the entrances of Port William and Berkeley Sound. There are no regulations in the Falkland Islands regarding the movement of vessels through particular areas. The frequency of vessel movements in Port William and Berkeley Sound is high but seasonal, with many cruise vessels entering Port William during summer months, whilst more fishing boats and their associated vessels enter the harbour during the months of February and March and July to September. Berkeley Sound and Port William are used as bunkering sites for reefer and refuelling vessels, particularly (but not exclusively) during the peak fishing season of February to October.

Only vessels that tie up at registered ports in the Falkland Islands must have valid rat-free certificate. Vessels that anchor in Port William and Berkeley Sound may carry rodents, cockroaches and other invasive species. The Falkland Islands has a Biosecurity plan dedicated to Kidney Island.

For all oil spills, the Fisheries Department, FIGAS, Policy Unit and Falklands Conservation are usually amongst the first respondents. There is a kit of equipment available for use, including booms and dispersants, but often the nature of the coastline and sea conditions prohibit their use.

There have been three prosecutions for oil spillage in Berkeley Sound over the past 15 years (Fisheries Department records). In one case, oily water (i.e. gas oil and engine oil) was discharged through the deliberate pumping out of bilges and in another there was an accidental spill of gas oil. One reefer also grounded onto Cochon Island as it entered Berkeley Sound in April 2005. The reefer was able to free itself and anchor further into Berkeley Sound, where oil started leaking out, with a spill of around 130 tonnes of intermediate gas oil. At least twenty-five dead and oiled seabirds were subsequently reported from Kidney Island and Cape Pembroke (Falklands Conservation 2005).

4.13.2. Fishing effort

There is little fishing for any species by any method within 20 nautical miles of the four tussac islands. However, many of the seabirds and marine mammals that breed on or near the four islands forage well away for their breeding sites. They are at risk of being harmed or killed when caught on fishing lines and nets. These threats are addressed through other FIG policies and action plans managed through the Falkland Islands Fisheries Department.

4.14. Imagery of all islands:



Figure 5: Google Earth image of Kidney Island

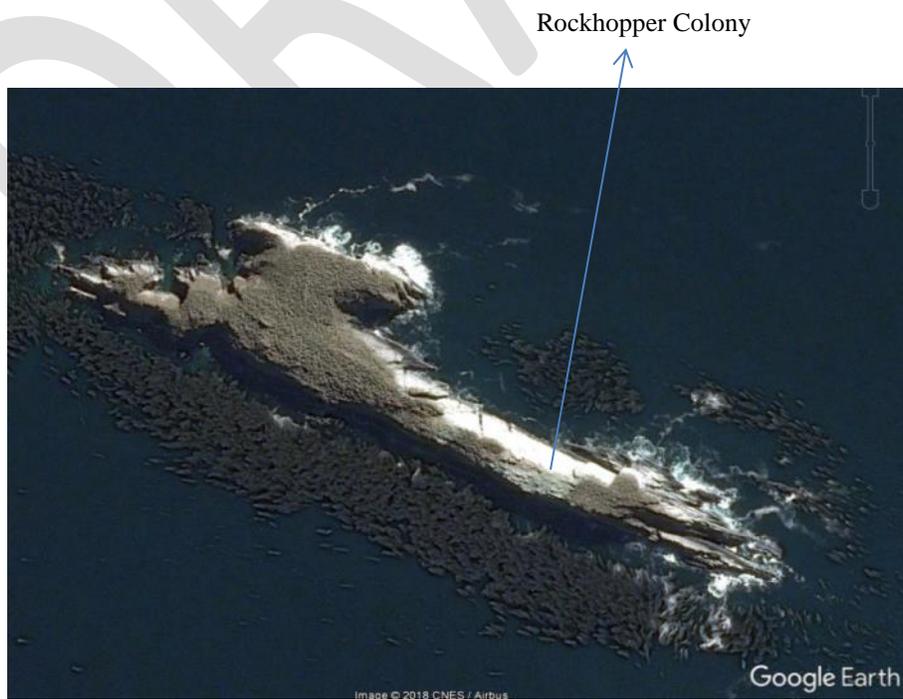


Figure 6: Google Earth image of Cochon Island

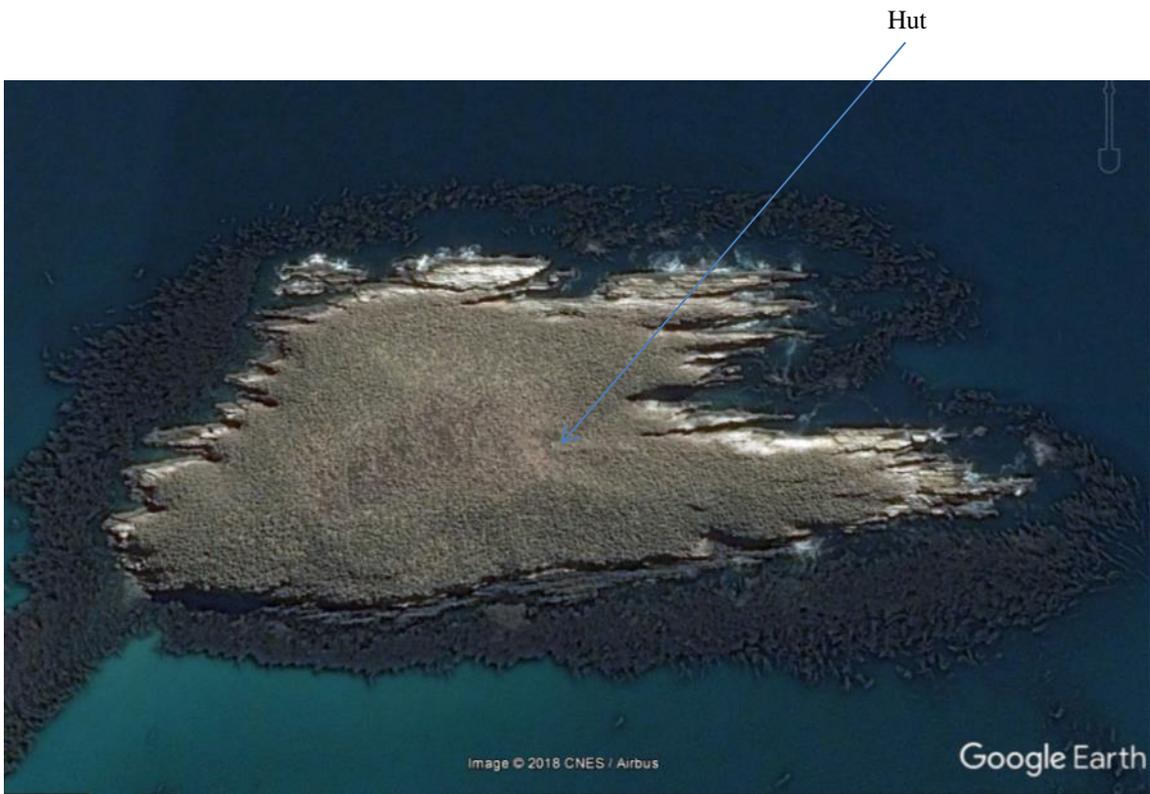


Figure 7: Google Earth image of Top Island



Figure 8: Google Earth image of Bottom Island

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