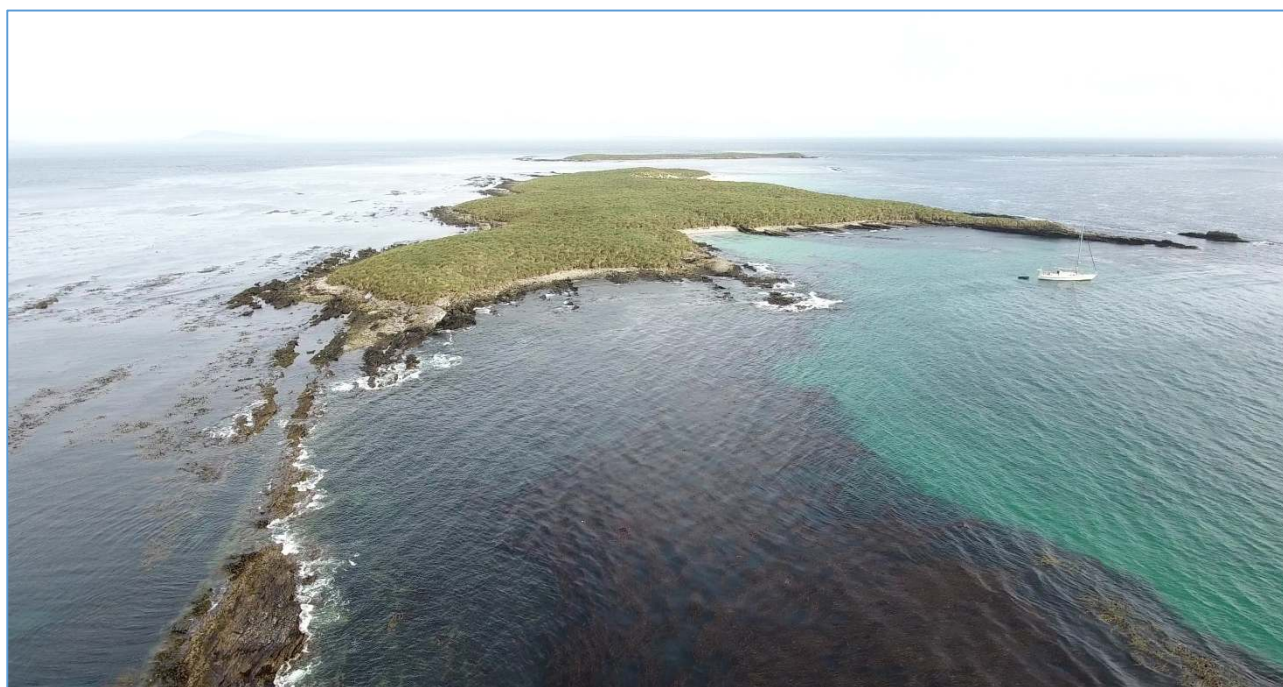




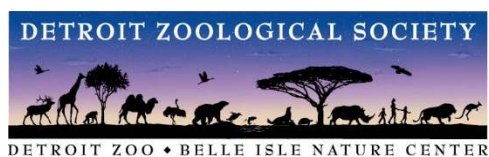
## Report on a visit to Falklands Conservation owned South Twin, North Twin, Double and Outer Islands

February 2019

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Supported by



## Acknowledgements

Many thanks to Detroit Zoological Society (DZS), especially the Board and Trustees for supporting the trip and to Paul Buzzard for turning the FC island visits concept into reality. Further thanks to Jessica Jozwiak at DZS for her involvement in the fieldwork and providing great company on the trip.

Falklands Conservation are very grateful to Marie-Paul and Hugues Delignieres for fantastic logistical support in *Le Sourire*.

Thanks to those colleagues within Falklands Conservation who were also involved in making the trip a success and to the Wildlife Conservation Society for loan of the Wildlife Acoustics – Song Meter SM4s.

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## Summary

A trip was undertaken on the 9-13 December 2018 to Falklands Conservation (FC) owned South Twin, North Twin, Double and Outer Islands.

The purpose of the trip was to gather further baseline data on the Islands, which are rarely visited, in order to *feed into* the development of management proposals for each site. The intention is that the management considerations and information provided within this document will be used in the production of a site information sheet and a table of management actions for each Island. Consequently, this report and its content should be considered a *supporting document* and not a management planning document for the sites.

The Twins were designated as a National Nature Reserve in 1964 and their conservation importance is further substantiated by the Islands having been identified as constituents of globally significant sites for biodiversity:

- The Islands are part of Priority Key Biodiversity Area (KBA) – FKL-17 West Point Island Group and Carcass Island. The Islands themselves are likely to contribute to the striated caracara population for which the KBA is part designated
- The Twins also are part of FK017 West Point Island Group Important Bird and Biodiversity Area (IBA). Notable contributions to the IBA designation are probable burrowing seabirds, possible breeding southern giant petrel, and the presence of endemic sub-species of bird. Non-bird biodiversity noted in the designation also includes low presence of non-native plants and the presence of sea lions.

Based on the surveys described, the features for which both Islands contribute to international designations appeared to be in favourable status, although the status of burrowing seabirds remains unknown. In addition the sites have further features of note. South Twin is one of the top five (likely third) most important breeding locations for southern elephant seal in the Falkland Islands – it is possible that only around this number of breeding sites occur in the islands. Its rodent free status enables it to support healthy populations of endemic Cobb's wren and tussacbird. Its remote and undisturbed situation may also contribute to it supporting significant numbers of the third endemic bird species - the Falkland steamer duck. South Twin also supports a very good example of established bluegrass habitat, which is a threatened habitat identified under the Important Plant Area (IPA) identification process. Counts of southern elephant seal for North Twin were also very notable and the suggestion that this is also now a breeding site, albeit for a handful of individuals, adds to the value of this site. As with South Twin, healthy populations of Cobb's wren and tussacbird are undoubtedly attributable to its rodent free status.

The Twins are considerable assets for FC being sites of significant value for biodiversity and examples of near pristine tussac islands. It is critical that management actions continue to ensure that they remain rodent free, prevent the introduction of non-native plant species and avoid degradation through human activity, such as fire or disturbance. There is no specific requirement for active practical management, but monitoring is vital for informing conservation and management of these sites in the future.

Double and Outer Islands have no nature conservation designations associated with them. Double Island supports a good example of the threatened bluegrass habitat, and mature tussac that show little signs of modification. Few non-native plants are present and these are not considered to pose significant risk to native habitats under current conditions. There appear no records to suggest it has been grazed, or evidence during the survey of previous fire. There has however been rats present in the past which has likely impacted small bird populations on the Island. There was a small (presumed breeding) population of southern sea lion and good numbers and diversity of coastal birds. Outer Island has been modified by grazing and fire, though re-vegetation seems to have occurred where open areas in the tussac habitat are covered by a mix of non-native and native species. There was no notable association of pinnipeds with the Island. Breeding rock shag and imperial cormorant were the notable seabird species present. Surveys indicate that small bird populations have indeed benefited from the rat eradication in 2001; however, in 18 years this has not enabled re-colonisation by Cobb's wren and tussacbird. This is likely due to the distance of potential source populations from the Islands.

Double and Outer Islands are both good examples of tussac islands and support commonly associated species. They continue to be an opportunity for re-colonisation or re-introduction of Cobb's wren and tussacbird. There are no practical management actions deemed necessary at this time however, biosecurity and monitoring approaches need to be employed to ensure their current status is conserved and recovery potential is maintained.

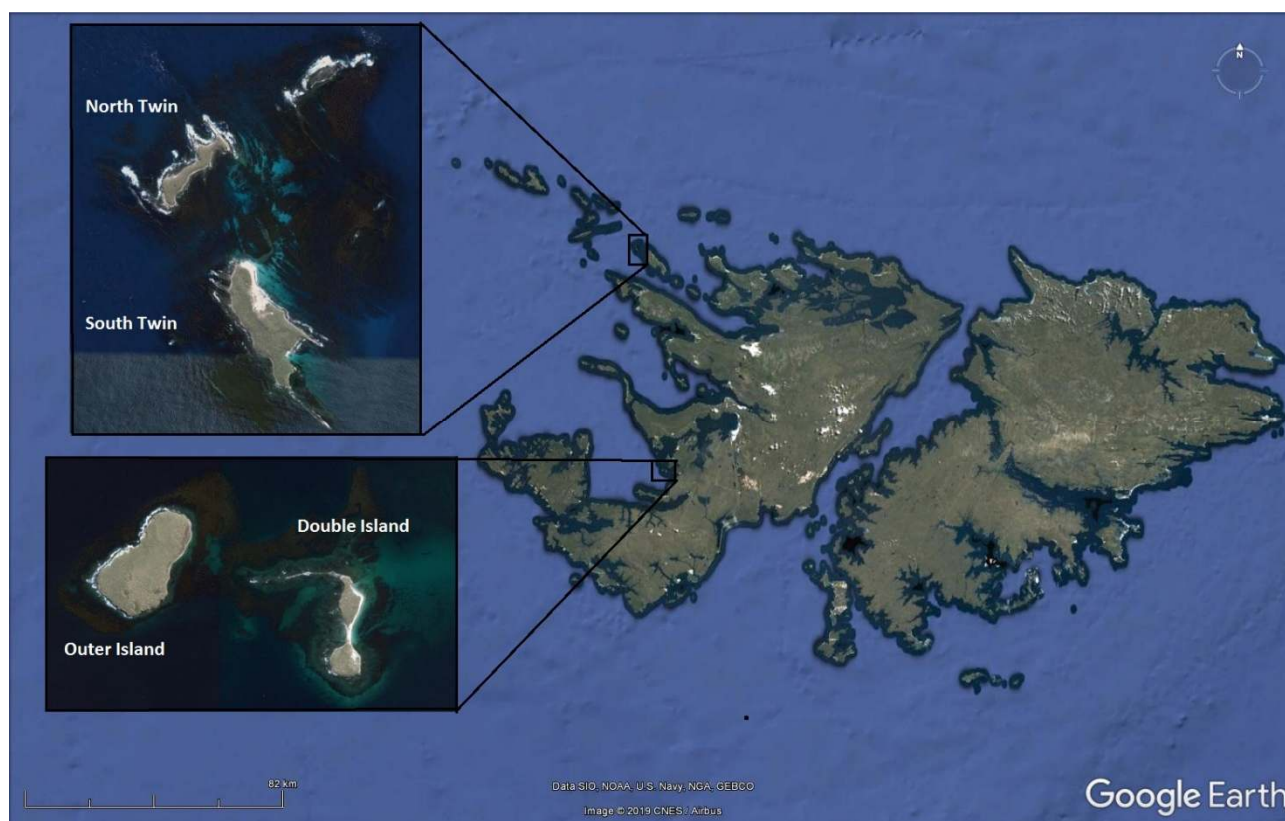
Marine debris – primarily plastic items from ships, were a disappointing feature of coasts on all of the islands visited. These would be difficult to remove due to difficulties in landing and transporting large items. However initiatives to reduce plastic waste and removal or containment options should be considered for the future.

The trip highlighted a number of repeated management considerations across FC Island reserves, which are:

- rodent surveillance
- biosecurity measures
- monitoring pinnipeds and seabirds
- monitoring large-scale changes in vegetation

## Introduction

A trip was undertaken on the 9-13 December 2018 to Falklands Conservation (FC) owned South Twin, North Twin, Double and Outer Islands (**Figure 1**). FC staff comprised Frin Ross, Andy Stanworth and Esther Bertram. Jessica Jozwiak attended from Detroit Zoological Society. The boat *Le Sourire* was skippered and crewed by Hugues and Marie-Paul Delignieres.



**Figure 1.** Site locations within the Falkland Islands

The purpose of the trip was to gather further baseline data on the Islands, which are rarely visited, in order to *feed into* the development of management proposals for each site. The intention is that the management considerations and information provided within this document will be used in the production of a site information sheet and a table of management actions for each Island. Consequently, this report and its content should be considered a *supporting document* and not a management planning document for the sites.

Developing management plans for these sites would support objectives in the Falkland Islands Biodiversity Framework 2016-2030 and the Falklands Conservation Strategy 2015-2019.

The group landed at:

South Twin (9 and 10 Dec.)

North Twin (11 Dec.)

Double Island (12 Dec.) (Accompanied by landowners from Coast Ridge, Roy Cove and Spring Point farms)

Outer Island (12 Dec.) (Accompanied by landowners from Coast Ridge, Roy Cove and Spring Point farms)



## Methods

A five day trip is not sufficient time to gather comprehensive data on the Islands. Each of the different Islands have different challenges in terms of access and movement. Given the time restrictions the main aims were to gather as much general information about the habitats and species present on each Island, including both native and non-native, as possible. This was done through circumnavigation of the Islands and boat-based photography, drone use for aerial photography, and shore visits. Lists and counts of fauna and flora observed were made for smaller numbers of species, photos of larger colonies were taken.

Plant species abundance were recorded using the DAFOR scale: **D**ominant, **A**bundant, **F**requent, **O**ccasional, and **R**are.

Bird Surveys were conducted by accumulating counts of individuals observed on transects/survey routes at the site. This usually involved walking the coastline and where time allowed other routes around the islands. Colonies of birds were logged using GPS. The likely status of each species recorded was categorised as either Breeding, Probably Breeding, Possibly Breeding or Non-breeding.

Aerial video of the sites was taken using a DJI Phantom 4 drone at each island.

Marine debris surveys were conducted in accordance with FC standard methodology at each site. This information is to be reported separately.

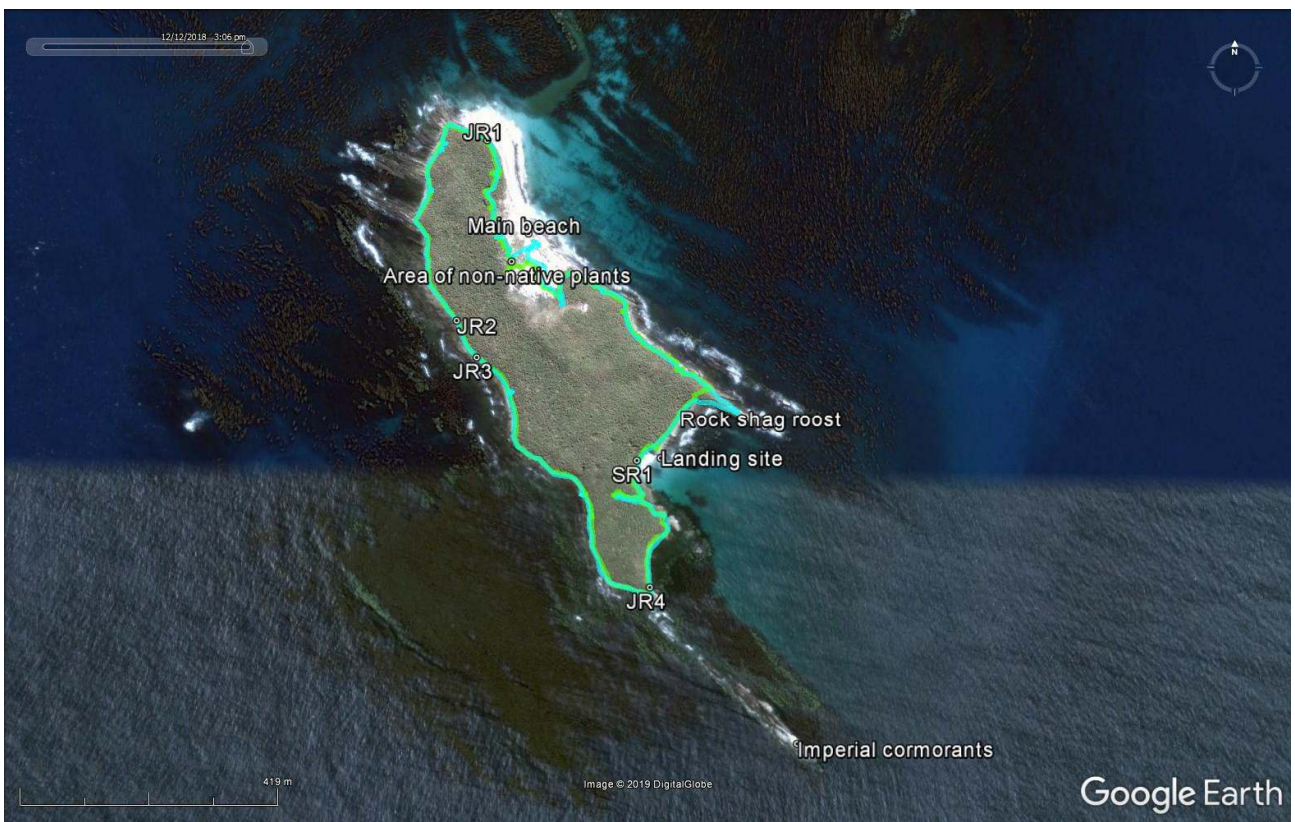
Landing sites and access considerations were recorded for future planning.

## Results

### South Twin



**Figure 2.** South Twin (drone image).



**Figure 3.** South Twin Island survey tracks and features (Google Earth image). JR1-4 are locations of striated caracara (Johnny rook) nests. Blue line – bird survey route, green line – habitat survey route.



## Access

A sheltered sand-beach and rocks on the south-eastern side of the Island provides good landing opportunities (**Figure 4**), though this may be more difficult in easterly winds. A number of southern elephant seals (*Mirounga leonina*) were using the beach and are likely to be present at other potential landing sites.



**Figure 4.** Landing site, South Twin.

## Habitats and Flora

A species list of those plants found on South Twin is provided in **Table 1**.

The Island was dominated by dense tussac (**Figure 5**) except in an area of sand dune (approx. 1,000 square meters) to the rear of the main beach where bluegrass dominated (**Figure 6**). The tussac appeared healthy and green despite being dry at the time of visiting and freshwater apparently limited – only one southern elephant seal wallow appeared to contain freshwater, as did one seep area close to the coast. Small patches of sword-grass and native celery were growing around the seep. It appeared that the Island had more pools in the past as there were sunken areas fringed by struggling sword-grass. These were now very dry with tussac growing across them (**Figure 7**).



Common name	Scientific name	Status	Present
Bluegrass	<i>Poa alopecurus</i>		A (D in dunes)
Goosefoot	<i>Chenopodium macrospermum</i>		R
Groundsel spp. (sp indet.)		I	R
Ladle-leaved buttercup	<i>Ranunculus trullifolius</i>		R
Lesser swine-cress	<i>Coronopus didymus</i>		R
Lilaeopsis	<i>Lilaeopsis macloviana</i>		R
Sheep's sorrel	<i>Rumex acetosella</i>	I	R
Stinging nettle	<i>Urtica dioica</i>	I	R
Sword-grass	<i>Carex trifida</i>		R
Prickly sow-thistle	<i>Sonchus asper</i>	I	R
Prickly-burr	<i>Acaena magellanica</i>		R
Tussac	<i>Poa flabellata</i>		D
Water-starwort	<i>Callitriche antarctica</i>		R
Wild celery	<i>Apium australe</i>		R
Liverwort	<i>Marchantia barbatina</i>	I	R

**Table 1.** Plant species recorded at South Twin (I – introduced, D – dominant, A – abundant, R – rare)



**Figure 5.** Tussac habitat, South Twin.





**Figure 6.** Bluegrass habitat, South Twin, popular with loafing southern elephant seals.

Ubiquitous non-natives tended to be found at top of the shore where tussac peat met the beach. Goosefoot was also found amongst boulders at top of beach. Other non-natives - nettles and sow-thistles were primarily found in bluegrass dune (**Figure 8**). Native celery was found amongst bluegrass, tussac and boulders, the plants were large and healthy but not abundant.



**Figure 7.** Dry hollows with sword-grass fringe, image from centre of hollow showing how these historic pools are now colonised by tussac, South Twin.





**Figure 8.** Non-native species to the rear of main beach including groundsel, stinging nettle and prickly sow-thistle, South Twin.

### *Fauna*

A total of 33 southern sea lion (*Otaria byronia*) were recorded around the shores of the Island. Most activity was focussed on the main beach (**Figure 9**) with 17 animals present including a bull and associated females. There was no evidence of breeding; however, the survey would be early to detect pups. Given the numbers and groupings of animals and the Island's history as a breeding site it is considered that breeding by this species on the Island is likely. In 2003, 115 sea lions were counted, including 43 pups on the Island as part of an Island-wide census (Thompson et al, 2005). Woods (2008) comments on a noticeable number of southern sea lions at the site on his visit in 2006, whilst Baylis (unpublished) recorded 68 pups at South Twin in 2014. The current count is lower than that of Thompson and is not comparable with the pup count of Baylis; however, this current survey was earlier in the season and did not include potential pup numbers, so it would be wrong to conclude any significant decline on this basis.





**Figure 9.** Main beach, South Twin, with southern elephant seal, southern sea lion and Falkland steamer duck.

The Island is a known breeding site for southern elephant seal (Woods 2008). The survey produced a count of 187 individuals of which 32 were this year's young, making the count consistent with that obtained in 2006 (Woods 2008). The main aggregation of this species was on the main beach; however, this species was widely encountered around the Island's shoreline. An individual with a yellow flipper tag, number 3480, was amongst those observed.

A summary of bird species and counts made during the visit are shown below in **Table 2**.

A total of 20 species of bird recorded at the site is broadly comparable to visits in 1997 and 2006 (Woods 2008) where 22 species were recorded on both occasions. As in previous surveys there were good numbers of the endemic Cobb's wren and tussacbird. In particular a very notable count of nearly 460 of the endemic Falkland steamer duck was made on the main beach. Woods previously recorded a count of 100 birds in 2006 indicating continued and increasing significance of this site for this species. In 2006 Woods found eight pairs of striated caracara in a specific survey for this species. Whilst the current survey could not focus on this species, observations of birds are consistent with this number of pairs. Rocky promontories provided sites for both rock shag and imperial cormorant (**Figure 10**), though neither were observed to be breeding.

Species	Number of individuals observed (unless stated)	Status	Notes
Tussacbird ( <i>Cinclodes antarcticus</i> )	Over one hundred observed – several hundred likely	Breeding	
Striated caracara ( <i>Phalacrocorax australis</i> )	10	Breeding	Four nests with eggs found ( <b>Figure 3</b> )
Kelp gull ( <i>Larus dominicanus</i> )	3	Non-breeding	
Magellanic penguin ( <i>Spheniscus magellanicus</i> )	10's to 100's estimate	Breeding	
Falkland steamer duck ( <i>Tachyeres brachypterus</i> )	489	Breeding	16 pairs, 8 pairs with ducklings, 457 loafing on beach
Turkey vulture ( <i>Cathartes aura jota</i> )	3	Probably Breeding	
Rock shag ( <i>Phalacrocorax magellanicus</i> )	20-30	Non-breeding	
Imperial cormorant ( <i>Phalacrocorax atriceps</i> )	120-130	Non-breeding	
Black-crowned night heron ( <i>Nycticorax nycticorax</i> )	4	Possibly Breeding	
Kelp goose ( <i>Chloephaga hybrid malvinarum</i> )	19	Breeding	
Crested duck ( <i>Lophonetta specularioides specularioides</i> )	26	Breeding	11 breeding pairs
Blackish oystercatcher ( <i>Haematopus ater</i> )	4	Probably Breeding	
South American tern ( <i>Sterna hirundinacea</i> )	3	Non-breeding	
Falklands thrush ( <i>Turdus falcklandii falcklandii</i> )	12	Probably Breeding	
Dolphin gull ( <i>Larus scorsebii</i> )	20	Non-breeding	All adults
Cobb's wren ( <i>Troglodytes cobbi</i> )	50+	Breeding	Mostly on south western coastline
White-bridled finch ( <i>Melanodera melanodera</i> )	7	Probably Breeding	3 pairs
Southern giant petrel ( <i>Macronectes giganteus</i> )	12	Non-breeding	Loafing on beach
Magellanic oystercatcher ( <i>Haematopus leucopodus</i> )	3 pairs	Probably breeding	
White-rumped sandpiper ( <i>Calidris fuscicollis</i> )	40 approx.	Non-Breeding	

**Table 2.** Bird species recorded on South Twin.





**Figure 10.** Rock shags and imperial cormorants, South Twin.

The Island continues to support a good representative bird assemblage for its size. Further, less conspicuous species, such as burrowing petrels and short-eared owl (*Asio flammeus*) may well be present but undetected. Sound recording devices (Wildlife Acoustics – Song Meter SM4) left near the landing beach overnight failed to record calls by other species; however, this is not evidence of absence as any colonies may be localised within the site and vocalisations by species in flight may have been limited or not occurred.

No evidence of rats or mice was noted during the visit and the presence of Cobb’s wren and tussacbird further suggests the island continues to be rodent free.

### *Management Considerations*

#### Access

Access is good, though tussac is relatively dense prohibiting easy movement.

- *It is important to ensure that biosecurity elements of FC’s Field-working Standard Operating Procedure remain appropriate for visits to the Island.*

#### Habitats and Flora

The existing tussac habitat appears in good state and no habitat degradation or erosion was evident. Small areas of non-natives were present but had not spread widely in the absence of control. The species found are not known to alter Falkland’s habitats making eradication or control a low priority.

- *No habitat restoration is necessary. General monitoring should track potential changes, including non-natives and be vigilant for the arrival of invasive flora or fauna. The presence of non-native plants should be considered when moving from this site to other islands and biosecurity measures implemented accordingly.*



## Fauna

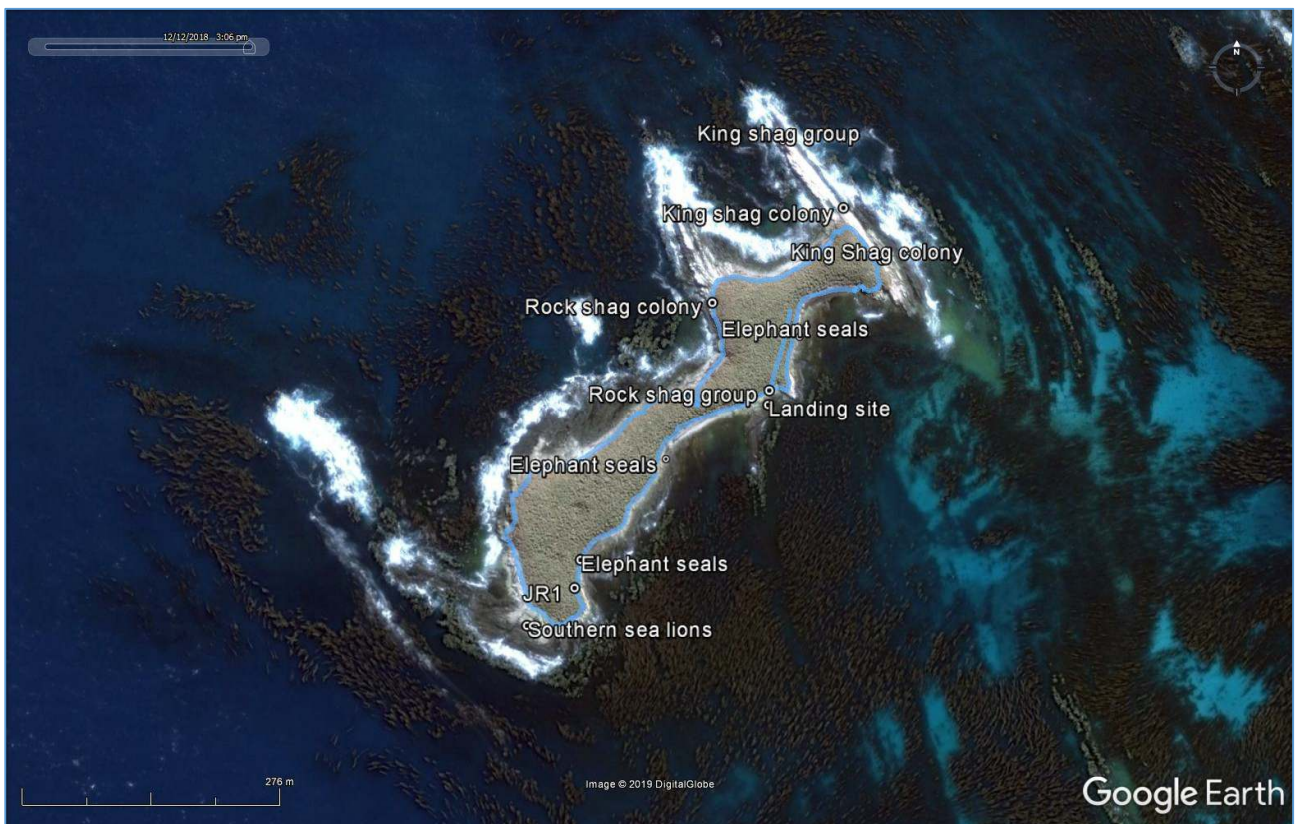
Survey findings provide no indication that any specific management action is necessary.

- *General monitoring should track potential changes.*
- *Observations on probable rodent free status are not conclusive - explore improved options for rodent surveillance.*

## North Twin



**Figure 11.** North Twin (drone image).

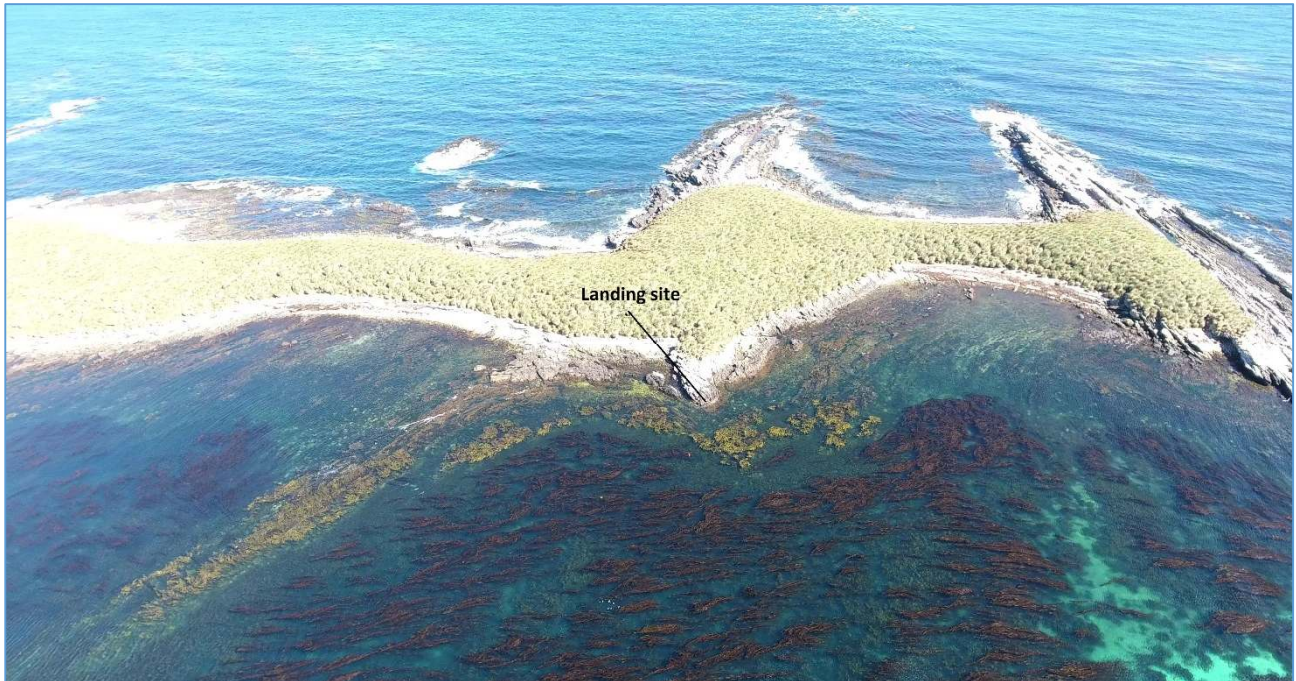


**Figure 12.** North Twin survey tracks and features (Google Earth image). Blue line – plant and bird survey route. JR1 – location of striated caracara (Johnny rook) nest.



## Access

Access to North Twin is limited by extensive kelp beds, reefs and shallow water (**Figure 13**). Landing on the more exposed south western side was investigated but in the end landing was achieved on a *high tide* by zodiac from the boat moored at South Twin. Other landing opportunities are likely to be few.



**Figure 13.** Landing site, North Twin

## Habitats and flora

North Twin vegetative habitat was exclusively mature dense tussac which appeared healthy and green. The only other plant recorded was water starwort. Plant species recorded during the survey on North Twin are shown in **Table 3**.

Common name	Scientific name	Status	Present
Tussac	<i>Poa flabellata</i>		D
Water-starwort	<i>Callitriche antarctica</i>		R

**Table 3.** Plant species recorded at North Twin (D – dominant, R – rare)

## Fauna

A total of 57 southern elephant seals were recorded during the surveys on North Twin. The count included two of this season's pups. This is a notable increase in presence since two animals were recorded in 1997 and none in 2006 (Woods 2008). It also represents the first record of probable breeding for the site. The seals were spread around the coasts but a group of 14 were observed together on a shingle beach on the south east of the Island (**Figure 14**). The observations included a marked individual with a yellow flipper tag, number 4553.





**Figure 14.** Southern elephant seal, North Twin.

Southern sea lion were present on the Island, with 66 individuals recorded, over half of which were found on rocky ledges on the southern coast of the Island (**Figure 15**). This is an increase on 15, 39, and 6 animals recorded during previous surveys in 1997, 2003 and 2006 respectively (Woods 2008, Thompson et al, 2005). This species was recorded breeding on the site in 2003, with 2 pups and Baylis (unpublished) recorded 48 pups on North Twin in 2014. The current survey was very likely too early to detect breeding, but it is considered likely.



**Figure 15.** Group of southern sea lion, south coast of North Twin.

Eighteen bird species were recorded during the visit to North Twin (**Table 4**). This is lower than 19 and 20 in 1997 and 2006 respectively (Woods 2008), but not notably so. The

composition is comparable; however, whilst rock shag and imperial cormorant were observed in good numbers on previous visits there was apparently no evidence of breeding. The presence of almost 1000 pairs of imperial cormorant at the northern end of the Island (**Figure 16**) is a significant development as well as the presence of a small colony of rock shags which increases the number of breeding bird species at this site.

Species	Number of individuals observed unless otherwise stated	Status	Notes
Falkland steamer duck	12 pairs	Breeding	
Dolphin gull	45	Non-breeding	Approx. 30 around imperial cormorant colony including sub-adults
Snowy sheathbill ( <i>Chionis albus</i> )	21	Non-breeding	Around imperial cormorant colony
Tussacbird	49	Breeding	Likely significant under-estimate due to limited survey coverage
Kelp goose	10 pairs	Breeding	Several pairs with goslings
White-bridled finch	5	Probably Breeding	
Cobb's wren	11	Breeding	Likely significant under-estimate due to limited coverage
Black-crowned night heron	2	Possibly breeding	
Turkey vulture	3	Probably Breeding	
Rock shag	32	Breeding	10 pairs at colony, other loafing on eastern side
Imperial cormorant	950 pairs	Breeding	Two colonies on north end approx. 560 and 390 nests – estimated from drone image
Crested duck ( <i>Lophonetta specularioides</i> )	4 pairs	Breeding	
Magellanic oystercatcher	2	Probably breeding	
Kelp gull	15	Non-breeding	
Blackish oystercatcher	7		2 pairs
Striated caracara	6	Breeding	1 nest found
Southern giant petrel	3	Non-Breeding	
Magellanic penguin	10s to 100s	Breeding	Estimate

**Table 4.** Bird species recorded on North Twin.





**Figure 16.** Part of the imperial cormorant colony, North Twin.

As with South Twin, North Twin had good, broad representation of native bird species for an Island of its size. This is undoubtedly helped by its likely rodent free status and relatively pristine tussac habitat. The presence of pinnipeds and now imperial cormorant colonies provides further foraging opportunities for scavenging and robbing seabird species such as sheathbills and gulls, which were commonly sighted (**Figure 17**).



**Figure 17.** Imperial cormorant colony with attendant snowy sheathbill and dolphin gull to rear, North Twin.



There was no direct evidence of rodents being present on the island. The presence of significant numbers of Cobb's wren and tussacbird also indicate that the island is rodent free.

### *Management Considerations*

#### Access

Limited in available locations and likely tides times, unreliable.

- *It is important to ensure that biosecurity elements of FC's Field-working Standard Operating Procedure remain appropriate for visits to the Island. Exemplary biosecurity is key for protecting the near-pristine habitats of this island.*

#### Habitats and Flora

The existing tussac habitat appears in good state and no habitat degradation or erosion was evident.

- *No habitat restoration is necessary. General monitoring should be vigilant for the arrival of invasive flora.*

#### Fauna

Survey findings provide no indication that any specific management action is necessary.

- *General monitoring should track potential changes.*

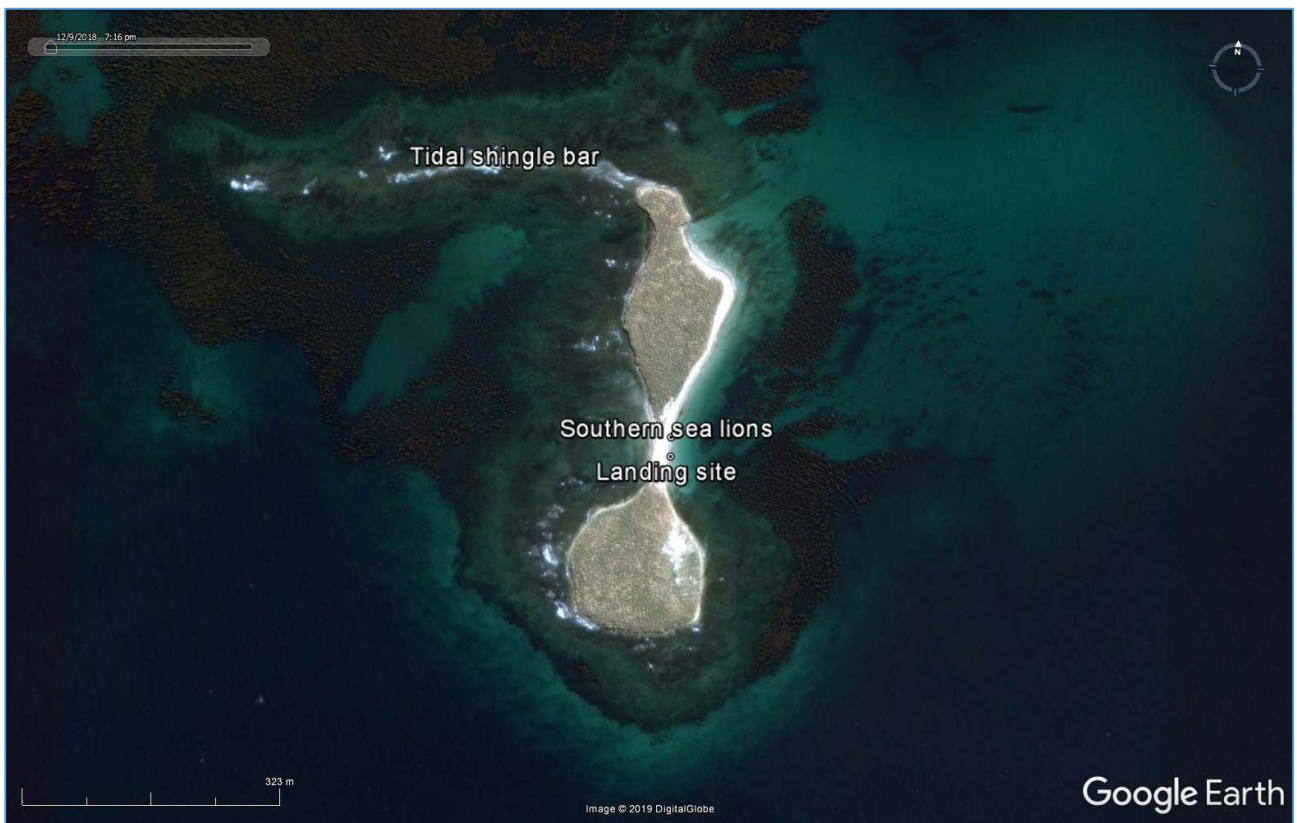
There was no direct evidence of rodents being present on the island. The presence of numerous Cobb's wren and tussacbird also indirectly point towards the island being rodent free.

- *These observations are not conclusive. Explore options for improved incursion surveillance for rodents.*

## Double Island



**Figure 18.** Double Island (drone image).

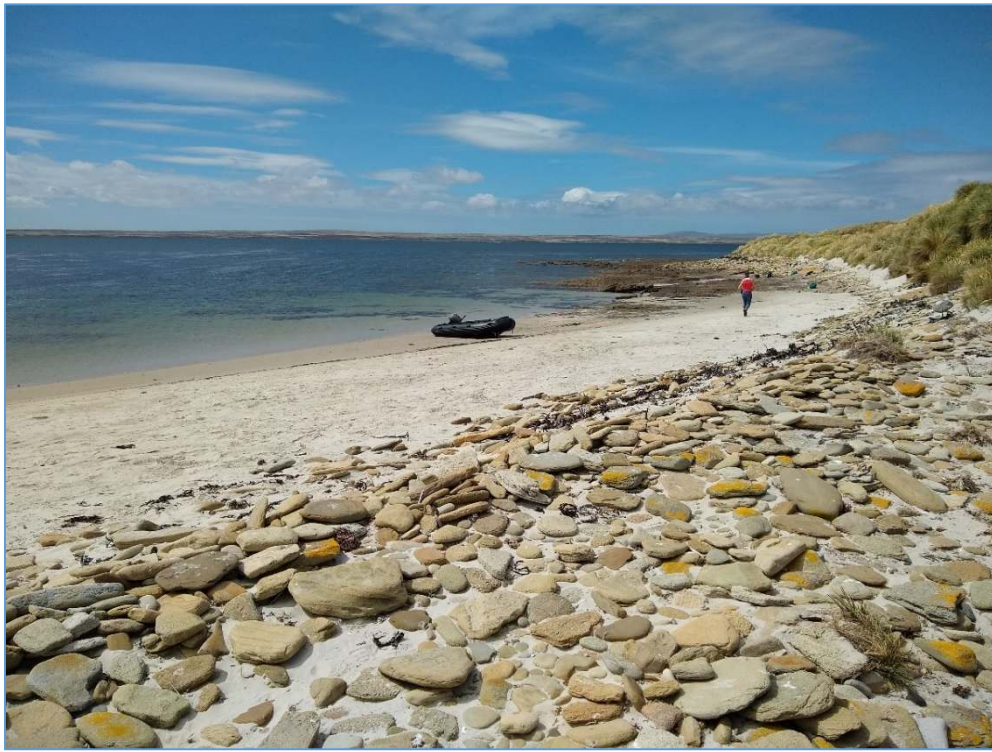


**Figure 19.** Double Island survey tracks and features (Google Earth image). Blue line – bird survey route, green line – plant survey route.



## Access

Easy access was achieved via the sandy beach on the eastern side of the Island, sheltered from prevailing weather (**Figure 20**). The beach is used by good numbers of southern sea lions.



**Figure 20.** Landing site, Double Island.

## Habitats and flora

Double Island was dominated by dense tussac except in sand dune areas (approx. 1,500 square meters) on south eastern shore where bluegrass dominated (**Figure 21**). The presence of good bluegrass habitat is not consistent with Woods 2008, which report non-native marram grass (*Ammophila arenaria*) as present with tussac. Marram was not found at all during the current survey. The tussac habitat appeared healthy and green. Small numbers of sea cabbage were found on boulder beaches. Non-native plant species (annual meadow-grass and groundsel) were widespread close to the coast. No obvious freshwater ponds were found during the visit. A list of plant species recorded during the survey is provided in **Table 5**.

Common name	Scientific name	Status	Present
Annual meadow-grass	<i>Poa annua</i>	I	R
Bluegrass	<i>Poa alopecurus</i>		O (D in dunes)
Groundsel spp. (sp indet.)		I	R
Lesser swine-cress	<i>Coronopus didymus</i>		R
Sea cabbage	<i>Senecio candidans</i>		R
Tussac	<i>Poa flabellata</i>		D

**Table 5.** Plant species recorded at Double Island (I – introduced, D – dominant, O – occasional R – rare)



**Figure 21.** Bluegrass habitat, Double Island.

### *Fauna*

A total of 52 southern sea lion were hauled out on the eastern sand beach (**Figure 22**). In 1998 Woods records ‘a few’, ‘six around the coast and a few in the tussock’ in 2003 and then at least 30 on the Island in 2006. There was no record of the Island in the island-wide survey undertaken in 2003 (Thompson et al, 2005) or as a breeding site in a 2014 island-wide census (Baylis unpublished); however, given the numbers of animals at this time of year and suitability of the site breeding is considered highly possible.



**Figure 22.** Southern sea lions, landing beach, Double Island.



A small number of whale bones were evident on the shingle ridge including vertebrae and rib from a large baleen species.

Those bird species recorded during the period ashore are shown in **Table 6** below.

Species	Number of individuals observed unless stated	Status	Notes
Falklands steamer duck	104	Breeding	4 pairs, rest on beach to south Estimate
Magellanic penguins	Several 10s	Breeding	
Blackish oystercatcher	4	Breeding	1 pair - nest found
Crested duck	18	Breeding	3 pairs with ducklings 5 pairs
Magellanic oystercatcher	24	Breeding	2 pairs
Falklands thrush	3	Probably Breeding	
Striated caracara	1	Probably Breeding	
White-bridled finch	8	Probably Breeding	
Upland goose	1 pair	Probably Breeding	
Falkland skua	2	Non-breeding	
( <i>Stercorarius antarcticus</i> )			
Grass wren	6	Probably Breeding	
( <i>Ciostothorus platensis</i> )			
Turkey vulture	16	Probably Breeding	
Southern giant petrel	1	Non-breeding	
Dark-faced ground tyrant	5	Breeding	
( <i>Muscisaxicola maclovianus</i> )			
Black-chinned siskin	1 pair	Possibly Breeding	
( <i>Spinus barbatus</i> )			
Black-crowned night heron	3	Possibly Breeding	
Kelp goose	1	Probably Breeding	
South American tern	3	Non-breeding	
Kelp gull	123	Non-breeding	
Dolphin gull	11	Non-breeding	Foraging on shallow reefs

**Table 6.** Birds recorded on Double Island.

Despite an apparently successful rodent eradication attempt on Double Island in 2001, there were no records of Cobb's wren or tussacbird during the visit. Whilst a very small population of Cobb's wren may possibly have evaded detection, several grass wren were still detected in the tussac and given the apparent lack of ability for Cobb's wren to recolonise all but the shortest distances, it is considered highly unlikely that they are present. The nearest known site for Cobb's wren is around 28km and it is likely that distance from a donor population has caused their absence rather than the occurrence of rats or mice. It is expected that the more conspicuous tussacbird would have been observed if present and, given they appear much more mobile in recolonising sites, the

lack of them also substantiates the presumed absence of Cobb's wren. Numbers of species of song birds were consistent with Woods visit in 2006 (Woods 2008), having increased since the eradication and the total number of breeding species (including probable breeders) is also consistent.

The large expanse of reef and shallow waters with kelp beds and other algae provide great opportunities for shorebirds and gulls, particularly at low tide (**Figure 23**).



**Figure 23.** Large expanses of exposed rocky shore and shallow waters over kelp beds provide numerous foraging opportunities for gulls (white dots over kelp in foreground).

Comparisons of current and historic numbers observed indicates at least stable if not increased populations/ presence of shorebirds in general, including a large group of over 100 endemic Falkland steamer duck.

Woods 2008 reports a colony of breeding dolphin gulls of '60+ pairs' in 2001; however, this was not observed in 2006. Eleven individuals of this species were recorded on the current survey and Double Island does not appear to be a current breeding site for this species. Whilst this species is often considered highly mobile, single species colonies of this species (i.e. when they are not amongst kelp gulls) can exhibit long-term site fidelity such as at New Island, Sea Lion Island and Bluff Cove. As the Falkland Islands are considered to support a significant proportion of the global population of this species it is notable that the species no longer breeds at the site.

Remains of a slender-billed prion were found which might indicate the presence of this species; however, equally this species could be caught over water by peregrine falcon (*Falco peregrinus cassini*) or short-eared owl and brought to the island for consumption. There was no indication of the presence of sooty shearwaters (*Ardenna grisea*), either by remains, or by burrows, as previously reported.

There was no direct evidence of rodents being present on the island.



## Marine debris

The visit also provided the opportunity for nearby landowners to get ashore, who collected marine debris during a walk around the beaches. The larger items proved to be predominantly fishing industry waste (**Figure 24**).



**Figure 24.** Some of the marine waste collected on Double Island.

## Management Considerations

### Access

Access onto the sand beach is relatively sheltered and simple.

- *It is important to ensure that biosecurity elements of FC's Field-working Standard Operating Procedure remain appropriate for visits to the Island.*

### Habitats and Flora

Habitats appear to be in favourable conditions. The lack of previously reported marram grass reduces considerably the management considerations. The two non-native species recorded would be incredibly difficult to eradicate and pose little or no risk to the tussac habitat under current conditions.

- *No habitat restoration is necessary. General monitoring should track potential changes, including non-natives and be vigilant for the arrival of invasive flora or fauna. The presence of non-native plants should be considered when moving from this site to other islands and biosecurity measures implemented accordingly.*

## Fauna

There appear to be no imminent threats to the fauna at the site itself. There was no direct evidence of rodents being present on the island, however, there was no evidence of re-colonisation by Cobb's wren or tussacbird.

- *Monitoring should be used to track potential changes.*
- *Consideration could be given to the merits of a re-introduction trial for Cobb's wren. Whilst the number of sites on which this species has been recorded continues to increase, the opportunity to increase the resilience of this endemic species to threat is available should appropriate techniques be employed.*
- *Observations on probable rodent free status are not conclusive. Explore improved options for rodent surveillance.*



## Outer Island



**Figure 25.** Outer Island (drone image).



**Figure 26.** Outer Island survey track and features (Google Earth image). Blue line – survey route.



## Access

Fairly sheltered access from prevailing winds and swell is located on a shingle beach to the east of the Island (**Figure 27**).



**Figure 27.** Landing site, Outer Island

## Habitats and Flora

A list of plant species recorded during the survey is provided in **Table 7**.

The Island is dominated by tussac habitat which is generally mature and dense (**Figure 28**). In areas to northwest there has been some tussac die-back on top of cliffs - perhaps due to imperial cormorant activity in the past. Also at the north-eastern tip tussac was more open and dominated by introduced species - visible as dark green area on **Figure 25**. In these areas sheep's sorrel dominated with sparse tussac, occasional sow-thistle and other non-natives. Sea cabbage and starwort were rarely encountered around the coast.

To the southeast there were a number of patches of heath including diddle dee, woodrush and bluegrass plants (**Figure 29**). All of the non-tussac dominated areas showed signs of having been burnt in the past - a sink hole was found in the south of the Island (**Figure 30**) and a clear orange layer of soil to the north east. Historic grazing was also apparent (cattle bones were found) and may have opened up the area to the northeast by removing tussac.



Common name	Scientific name	Status	Present
Bluegrass	<i>Poa alopecurus</i>		R
Early hair-grass	<i>Aria praecox</i>	I R	
Groundsel spp. (sp indet.)		I	R
Lesser swine-cress	<i>Coronopus didymus</i>		R
Sea cabbage	<i>Senecio candidans</i>		R
Diddle-dee	<i>Empetrum rubrum</i>		R
Native wood-rush	<i>Luzula alopecurus</i>		R
Native yarrow	<i>Acaena lucida</i>		R
Oval-leaved prickly-burr	<i>Acaena ovalifolia</i>		R
Prickly sow-thistle	<i>Sonchus asper</i>	I	R
Procumbent pearlwort	<i>Sagina procumbens</i>	I	R
Sheep's sorrel	<i>Rumex acetosella</i>	I	F
Tussac	<i>Poa flabellata</i>		D
Water-starwort	<i>Callitriche antarctica</i>		R
Liverwort	<i>Marchantia barbatina</i>	I	R

**Table 7.** Plant species recorded at Outer Island (I – introduced, D – dominant, F- frequent, R – rare)



**Figure 28.** Dense, mature tussac habitat, Outer Island





**Figure 29.** Open heath and bluegrass, Outer Island.



**Figure 30.** Sink hole, Outer Island.

### *Fauna*

A total of four southern sea lion were recorded, consisting two males and two females. Two young southern elephant seals were also present. Outer Island has no previous records of large numbers of seals (Woods 2008). The remains of a dead sea lion pup were found during the visit and individuals may occasionally breed there – a bull and single female were present on the north shore (**Figure 31**). As an undisturbed tussac island it is



likely to be used by pinnipeds occasionally, however it does not appear to be a key loafing or notable breeding site for them currently.



**Figure 31.** Bull and female southern sea lion present on the northern coast of Outer Island.

A number of whale bones were present at the landing site. These look to have been from a large baleen species. A sample was taken for genetic analysis.

As with Double Island, a successful rodent eradication was undertaken in 2001 on Outer Island. Similarly, on this Island there were still no records of Cobb's wren and tussacbird. Five species of song bird were recorded (**Table 8**) with only long-tailed meadow lark (*Leistes loyca*) absent from those recorded by Wood in 2006, which at that time constituted one pair and an additional female bird. Overall 19 species were recorded, somewhat less than the 25 recorded by Woods in 2006; however, breeding species totals from this survey and that from Woods were 17 and 18 (including probable breeders), so were comparable.

The site supports a small breeding population of the endemic Falkland steamer duck.

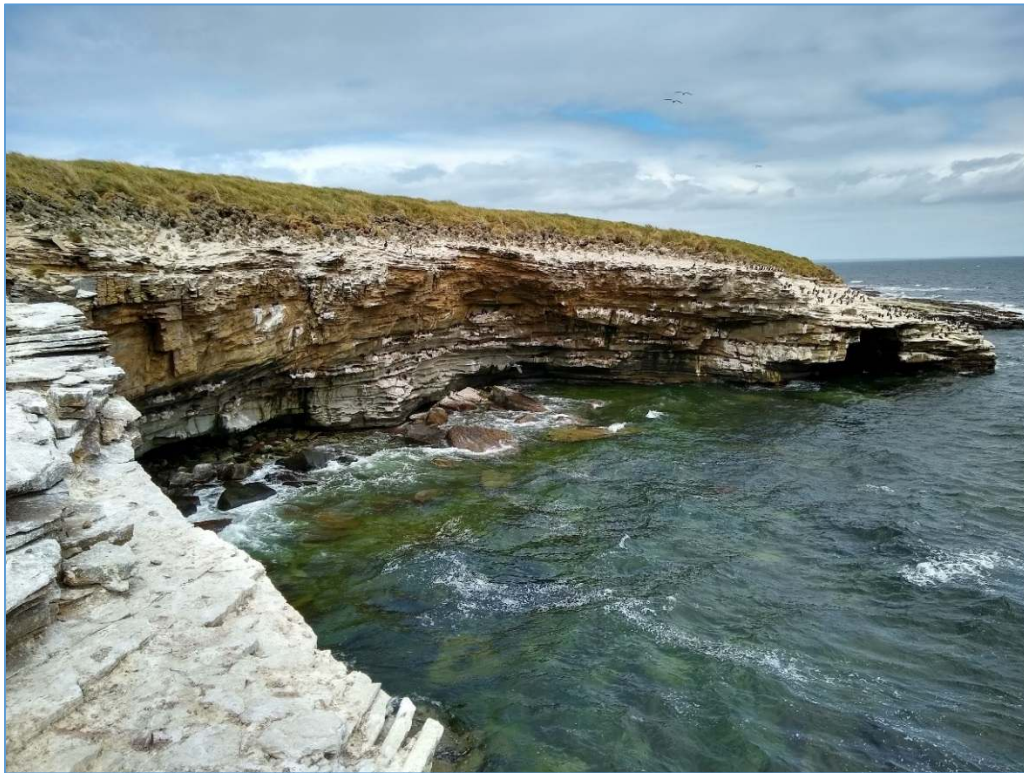
The Island continues to be a breeding location for rock shag having an impressive cove on the west coast (**Figure 32**) where this species nests along with a small group of nesting imperial cormorants and a larger number of loafers including many sub-adult birds.

Species	Number of individuals observed unless stated	Status	Notes
Magellanic penguin	10s to low 1000s	Breeding	Estimate - 13 individuals actually observed
Falkland steamer duck	7 pairs	Breeding	Ducklings observed
Blackish oystercatcher	5 pairs	Breeding	
Rock shag	150-200 pairs	Breeding	2 colonies on map. 10 pairs in southerly colony
Imperial cormorant	170-180	Breeding	Approx. 20 pairs on nests. Many sub-adults
Upland Goose	1 pair	Breeding	Goslings
Kelp goose	8 pairs	Breeding	Goslings observed
Crested duck	11 pairs	Breeding	
Magellanic oystercatcher	4 pairs	Probably Breeding	
Grass wren	5	Breeding	
Dark-faced ground tyrant	10	Breeding	Chicks observed
Black-crowned night heron	4 pairs	Breeding	Small colony on map
White-bridled finch	8	Probably Breeding	
Turkey vulture	2	Probably Breeding	
Striated caracara	1	Possibly Breeding	
Falkland skua	2	Non-breeding	
Dolphin gull	4	Non-breeding	
Black-throated siskin	13	Probably Breeding	
Falklands thrush	4	Probably Breeding	
Upland goose	1 pair	Probably Breeding	

**Table 8.** Birds recorded on Outer Island.

There was no direct evidence of rodents being present on the island.





**Figure 32.** Rock shag and imperial cormorant colony, Outer Island.

### *Management Considerations*

#### Access

Fairly reliable and safe access under appropriate conditions.

- *It is important to ensure that biosecurity elements of FC's Field-working Standard Operating Procedure remain appropriate for visits to the Island.*
- *Visitors need to be mindful of sink holes if pushing through tussock habitat*

#### Habitats and Flora

Habitats appeared to be in generally favourable condition and burnt areas have re-vegetated, though in some areas non-native species dominate. The non-native species recorded would be difficult to eradicate and do not strongly endanger the tussock habitat.

- *No habitat restoration is necessary. General monitoring should track potential changes, including non-natives and be vigilant for the arrival of invasive flora or fauna. The presence of non-native plants should be considered when moving from this site to other islands and biosecurity measures implemented accordingly.*

#### Fauna

There appear to be no imminent threats to the fauna at the site itself.

- *Monitoring should be used to track potential changes.*
- *Observations on probable rodent free status are not conclusive. Explore improved options for rodent surveillance.*

## Conclusions

The Twins were designated as a National Nature Reserve in 1964. Whilst this confers little actual protection for the site under current Order, other than that already afforded through the broader wildlife legislation, and banning the introduction of carnivorous animals, the Islands have clearly merited national recognition. Their importance is further substantiated by the Islands having been identified as constituents of globally significant sites for biodiversity:

- The Islands are part of Priority Key Biodiversity Area (KBA) – FKL-17 West Point Island Group and Carcass Island. The Islands themselves are likely to contribute to the striated caracara population for which the KBA is part designated (Taylor et al, 2016)
- The Twins also are part of FK017 West Point Island Group Important Bird and Biodiversity Area (IBA). Notable contributions to the IBA designation are probable burrowing seabirds, possible breeding southern giant petrel, and the presence of endemic sub-species of bird. Non-bird biodiversity noted in the designation also includes low presence of non-native plants and the presence of sea lions (Birdlife International 2019).

Based on the surveys described, the features for which both Islands contribute to international designations appear to be in favourable status, although the status of burrowing seabirds remains unknown. In addition the sites have further features of note. South Twin is one of the top five (likely third) most important breeding locations for southern elephant seal in the Falkland Islands – it is possible that only around this number of breeding sites occur in the islands. Its rodent free status enables it to support healthy populations of endemic Cobb's wren and tussacbird. Its remote and undisturbed situation may also contribute to it supporting significant numbers of the third endemic bird species - the Falkland steamer duck. South Twin also supports a very good example of established bluegrass habitat, which is a threatened habitat identified under the Important Plant Area (IPA) identification process (Upton 2012). Counts of southern elephant seal for North Twin were also very notable and the suggestion that this is also now a breeding site, albeit for a handful of individuals, adds to the value of this site. As with South Twin, healthy populations of Cobb's wren and tussacbird are undoubtedly attributable to its rodent free status.

The Twins are considerable assets for FC being sites of significant value for biodiversity and examples of near pristine tussac islands. It is critical that management actions continue to ensure that they remain rodent free, prevent the introduction of non-native plant species and avoid degradation through human activity, such as fire or disturbance. There is no specific requirement for active practical management, but monitoring is vital for informing conservation and management of these sites in the future.

Double and Outer Islands have no nature conservation designations associated with them. Double Island supports a good example of the threatened bluegrass habitat, and mature tussac that show little signs of modification. Few non-native plants are present and these are not considered to pose significant risk to native habitats under current conditions. There appear no records to suggest it has been grazed, or evidence during the survey of previous fire. There has however been rats present in the past which has likely impacted small bird populations on the Island. There is a small (presumed breeding) population of southern sea lion and good numbers and diversity of coastal birds. Outer Island has been



modified by grazing and fire, though re-vegetation seems to have occurred where open areas in the tussac habitat are covered by a mix of non-native and native species. There was no notable association of pinnipeds with the Island. Breeding rock shag and imperial cormorant were the notable seabird species present. Aside from the absence of Cobb's wren and tussacbird the Island supported a bird assemblage of the nature commonly associated with rodent free tussac islands. Surveys indicate that small bird populations have indeed benefited from the rat eradication in 2001; however, in 18 years this has not enabled re-colonisation by Cobb's wren and tussacbird. As Woods 2008 notes the nearest source populations are at some distance and given both are terrestrial littoral specialists and neither is migratory, it is difficult to see how re-colonisation could occur naturally

Double and Outer Islands are both good examples of tussac islands and support commonly associated species. They continue to be an opportunity for re-colonisation or re-introduction of Cobb's wren and tussacbird. There are no practical management actions deemed necessary at this time however, biosecurity and monitoring approaches need to be employed to ensure their current status is conserved and recovery potential is maintained.

Marine debris – primarily plastic items from ships, were a disappointing feature of coasts on all of the islands visited. These would be difficult to remove due to difficulties in landing and transporting large items. However we should encourage initiatives to reduce plastic waste and consider removal or containment options for the future.

The trip highlighted a number of repeated management considerations across FC Island reserves, which are:

- rodent surveillance
- biosecurity measures
- monitoring pinnipeds and seabirds
- monitoring large-scale changes in vegetation

## References

BirdLife International (2019) Important Bird Areas factsheet: West Point Island Group. Downloaded from <http://www.birdlife.org> on 24/01/2019.

Falkland Islands Biodiversity Database, Version 7. Falkland Islands Government.

Regional ecosystem profile – South Atlantic Region. 2016. EU Outermost Regions and Overseas Countries and Territories, Maria Taylor, Tara Pelembe & Paul Brickle. BEST, Service contract 07.0307.2013/666363/SER/B2, European Commission, 209 p + 3 Appendices.

Thompson, D, Strange, I, Riddy, M & Duck, CD 2005, 'The size and status of the population of southern sea lions *Otaria flavescens* in the Falkland Islands'. Biological Conservation, vol. 121, no. 3, pp. 357-367. DOI: 10.1016/j.biocon.2004.05.008

Upson, R. (2012). Important Plant Areas of the Falkland Islands. Report to Falklands Conservation.

Upson, R. and Lewis, R. Updated atlas and checklist. Report to Falklands Conservation. 2014; 226 pp.

Woods (2008). Island Visit Reports - The Twins - Falklands Conservation Nature Reserves.

Woods (2008). Island Visit Reports - Outer, Double and Harpoon Islands in Queen Charlotte Bay.