



Middle Island Visit

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Andrew Stanworth, Alicky Davey, Sarah Crofts, Micky Reeves,
James Fenton, Richard Lewis

Introduction

The following report details the activities and findings of a site visit to Middle Island by Falklands Conservation Staff and volunteers on 12 December 2012. Individual sections are summarised by those involved.

Seed Collection

Seed collection was undertaken by a group of approximately 20 volunteers, from Stanley and Mount Pleasant Complex, and led by Native Seed Mix Project Officer Alicky Davey. The group made two collections of tussac (*Poa flabellata*) seed and one of bluegrass (*Poa alopecurus*) seed.

Seeds were collected according to the guidelines issued by the Millenium Seed Bank. In order not to negatively impact the grass populations *in situ* only 20 % of the seed available on that day was collected and as many individuals from the population were sampled as possible. With each seed collection three herbarium specimens and a DNA sample were collected. The location and surrounding habitat characteristics of each collection were recorded in a handheld PDA.

Observations were made of the grasses' phenology. The tussac seed was past the optimum collection period with much seed having already dispersed. Both the sand and peat forms of bluegrass were still very green. The collection of bluegrass was made as an experiment to see to what extent seed would continue to ripen.

Post collection handling of the seeds involved stripping florets from the flower heads and passing the material through several sieves of varying mesh size to extract the seeds. Once this process was complete the equilibrium relative humidity of the seeds was measured using a hygrometer and the seeds were placed within a drying drum containing silica gel to reduce their moisture content to below 15 % relative humidity. At the conclusion of the native seed mix project the seed will be sent back to the Millennium Seed Bank for further cleaning and viability testing.

Data and photographs from this trip are held on the FC server at this location:

[\\Fcserver\\Projects\\externally_funded\\live_projects\\299 Darwin Habitat Restoration Seed Mixes\\LOOX02_UPDATES](\\Fcserver\\Projects\\externally_funded\\live_projects\\299_Darwin_Habitat_Restoration_Seed_Mixes\\LOOX02_UPDATES)

Coastal Bird Survey

A coastal bird survey was conducted by Micky Reeves and Sarah Crofts by walking the accessible coastline. This did not include the western end of the island (to the west of point 11 and 12) or the far north-east of the island (to the north-east of point 31) (**Map 1.**), owing to limited time ashore. Species, numbers, sex, maturity and breeding behaviour were recorded where possible and a brief habitat description of the shore and the immediate coastal vegetation noted. Marine debris was also recorded if encountered.

	MIDDLE ISLAND 02/2009					MIDDLE ISLAND 12/2012				
	Coast					Coast				
	STATUS	BP	FL	AD/UK	TOTAL	STATUS	BP	Y	AD/UK	TOTAL
Rock Shag	B	53	35		141	B	54		9	117
King Shag	B			325	325	B	600-800	50	50	1300
Kelp Gull	P			14	14	P			15	15
Dolphin Gull	P			2	2	P		3	1	4
South American Tern				0	0	B	4		9	13
Kelp Goose	B	23	56	21	123	B	15	57	22	109
Upland Goose	B	4	8		16	B	10	18	15	53
Falkland Steamer Duck	B	31	12	113	187	B	21	43	2	87
Crested Duck	B	13	16	62	104	B	1		49	51
Magellanic Oystercatcher	B	7	5	1	20	B	19	9	4	51
Blackish Oystercatcher	B	2	1		5	B	1		6	8
Falklands Thrush	B			7	7	B		1	12	13
Cobb's Wren	B			12	12	B			9	9
Grass Wren					0	B?			1	1
Tussacbird	B			246	246	B			80	80
Dark-faced Ground-tyrant					0	B			15	15
Long-tailed Meadowlark	B			5	5	B		1	7	8
White-bridled Finch	B			33	33	B			9	9
Black-chinned Siskin	B			9	9	B			2	2
Magellanic Snipe				4	4	B			4	4
Magellanic Penguin	B			115	115	B			197	197
Southern Giant Petrel	P			13	13				0	0
Gentoo Penguin	P			1	1	P			2	2
Night Heron	P			7	7	B			6	6
Speckled Teal					2	P	1			2
Turkey Vulture					0	P			8	8
Southern Caracara	B?				3	P				1
Falkland Skua				15	15	B			29	29
Variable Hawk					0					0
Short-eared Owl					0	B	1	1		3
Falklands Pipit						B?			1	1
Brown-headed Gull						P			1	1

Table1: Summary of birds observed during Middle Island bird surveys in 2009 and 2012 (B- breeding, P- probable breeder, B? – breeding status unknown, BP – breeding pairs, FL – recently fledged, Y – young, AD/UK – adult/unknown status). Numbers are based on direct observations of birds made whilst on walking the transect.

A total of 30 species were recorded, including 21 that were confirmed or likely breeders and probably a further two. This compares to 35 species recorded in 1997¹ (Woods and Woods 1997) and 24 species in 2009 (FC data).

The presence of Cobb's wrens indicates the island remains free of introduced mammalian predators. Magellanic penguins were abundant with noticeable burrows on the coastal slopes and inland in the diddle-dee. Smaller burrows were noted within the peat banks at the south-east coast (WP 26). No further investigations were carried out; however Woods & Woods (1997) recorded a carcass of a predated diving petrel found near a skua nest. Falkland skuas were abundant and territories were noted in the bluegrass behind the landing beach (WP 1) with at least seven birds seen holding potential nest sites. On the northern coast of the island, rock and imperial shags were breeding. Small scattered colonies of rock shags were found at low coastal cliffs (< 10 m) (WP 9 – 10), with an estimated total 54 breeding pairs this is similar to an estimated 53 breeding pairs observed in 2009. One king shag colony was located at the westerly end of the northern coast (WP 12). In 1997 300 nests were recorded, in 2009, 325 adults were observed in February but no juveniles. During this survey no comprehensive count was performed due to time restrictions and between 600-800 nests were estimated. The colony is spread between tussac bogs and on bare ground and considerable disturbance would be caused trying to conduct a full count. Several dolphin gulls and one southern caracara were seen nearby the shag colonies.

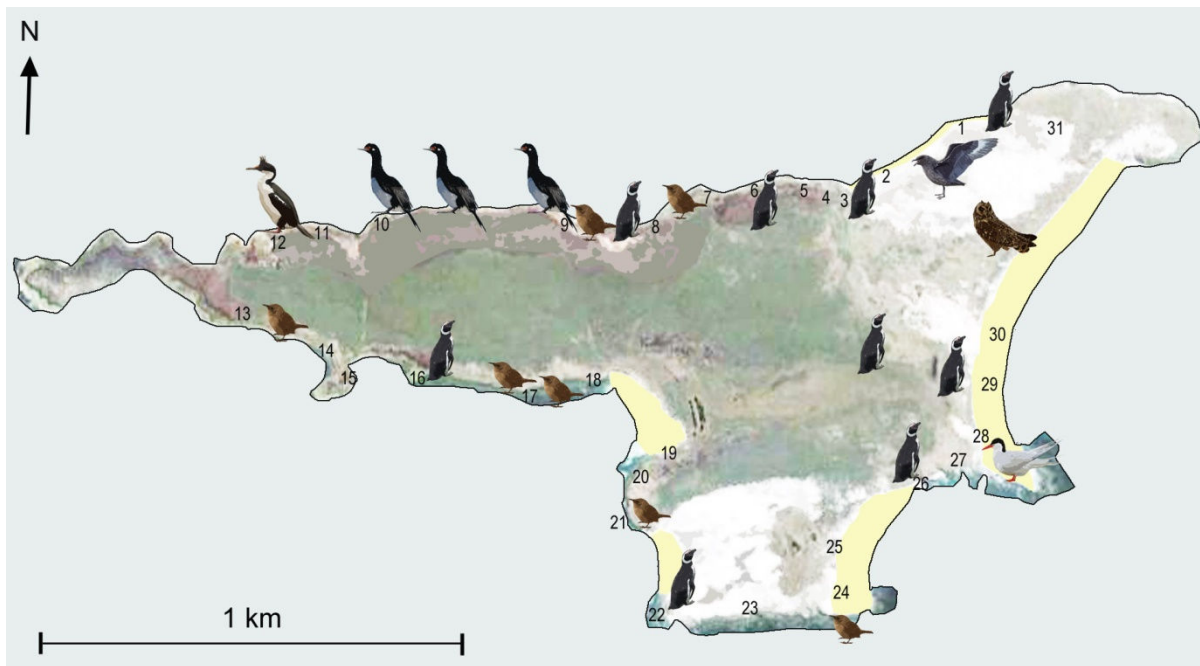
All nine native Falkland passerines were present; tussacbirds, Falkland thrushes, dark-faced ground tyrants and Cobb's wrens were seen along the coastal areas. One pipit and grass wren were seen inland behind the west facing sand beach (WP 19) within the diddle-dee and white grass. Only two parties of long-tailed meadowlarks were seen on the coastal greens bordering sandy beaches. Two sightings of black-chinned siskins were recorded and low numbers of white-bridled finches.

South-American terns were seen flying inshore and possibly four birds occupying nests at the point of the south end of the eastern sand beach (WP 28). We did not investigate further as these birds are highly sensitive to disturbance and it is recommended that this part of the island is avoided by all future visitors. One recently fledged tern was reported in the 1997 survey and evidence suggests that low numbers breed at Middle Island.

Kelp geese and Falkland steamer duck were the most prolific breeding coastal waterfowl with fewer crested duck and upland geese. Moderate numbers of immature non-breeding upland geese were present. One pair of speckled teal was seen on a pond behind the sand beach (WP 25).

Half a dozen adult black-crowned night herons were observed feeding in shallow waters along rocky shorelines and reefs. Magellanic oystercatchers were widespread and common across the island and only one pair of blackish oystercatchers noted. Low numbers of snipe were observed, however much of the interior of the island was not explored. At least one pair of short-eared owls breeds on the island with many sightings of the adult birds during day light. One owlet was also observed and their main territory appears to be in the bluegrass and sand dunes behind the long sand beach on the western coast (WP30 – 31)

¹ Woods, R. and Wood, N. (1997) Survey of Middle Island and Motley Island Nature Reserves – January 1997 Surveys. A report to Falklands Conservation.



Map 1. Middle island with locations of key breeding bird species and way points of the coastline survey.

Marine Mammals

No pinnipeds were seen during the surveys; however, the westerly and most easterly tips were not surveyed. Sea lions could be heard calling from the direction of nearby Green Island or Philimore Island. It is likely sea lions haul out on Middle Island from time to time.

Marine debris

The shores were relatively clean with only a few items of debris spotted along the northern coast (WP 1 & 8). Most consisted of fisheries and shipping related items: *Large plastic container, coil of old rope, plastic sheeting, small buoy.*

Old sheep pens are located in a valley along the southern coast (WP 15).

Permanent monitoring plots on burnt peat

On 1 December 2012 photographs were taken by James Fenton with the camera directly above each marker post, so that area immediately next to the post was not included. In the photos below from 2009, it is not exactly clear where the camera was positioned. In 2012, pictures were taken with a 50 mm lens, both 3-4 individual pictures per corner and also self-stitched panoramas (shown below) at each corner.

Initial conclusions were of very little change since 2009, with no significant re-colonisation except two young tussac bogs and circa ten plants of scurvy grass within five metres of the south boundary of Plot 1. The diddle-dee on the south fire boundary appears to have declined, with blown peat dust infilling the hollows. The native rush (*Juncus scheuchzerioides*) does not appear to have increased significantly.

North-east corner of plot 1

2009



2012



South-east corner of plot 1

2009



2012



North-west corner of plot 2

2009



2012



South-west corner of plot 2

2009



2012



Plant Survey

The plant survey was undertaken by Richard Lewis and Brian Bond.

Falkland Rock-cress (*Phlebolobium maclovianum*)

This globally threatened species, endemic to the Falklands was the main focus of botanical survey and recording.

A total of 62 individuals were found, of which 46 were flowering and 16 were non-flowering rosettes. This is a significant increase from the 29 recorded by R. Upson in 2010. However, it should be noted that the initial survey was limited by time constraints and the plants can be hard to locate among tall grasses. Therefore it must remain doubtful whether this reflects a genuine increase in number of individuals or an increase in recorder effort. In both surveys, plants were restricted to a small area inland from the southern part of the eastern sand beach.

Two people spent around three hours thoroughly surveying and recording this small area and areas close-by and we were confident that the vast majority of individuals were recorded, though it is still possible that additional populations occur elsewhere on the island.

The plants mostly inhabited an ecotone or mosaic habitat with scattered tussac and bluegrass amongst dwarf shrub heath dominated by diddle-dee and small-fern. It appeared that this may be a transitional habitat between the dwarf shrub heath and tussac and bluegrass stands, both of which appeared to be expanding. This was the habitat in which the increase in numbers appeared to have occurred.

In contrast, in an adjacent area of tall, dense cinnamon-grass with scattered tussac bogs, the number of plants had declined from 20 found in 2010 to only three (two mature and one non-flowering) in 2012. These few plants appeared to be struggling to compete with the very dense grass. Again, this suggests a transitional habitat between more open grassland, which perhaps previously favoured the rock-cress, and denser grassland, from which the rock-cress is outcompeted.

These observations which suggest that rock-cress may favour habitat mosaic, ecotones or mosaic habitats are in line with observations of other large populations on Narrows Island (Port Howard), where it is colonising tussac fringe and heathland in recovery from past grazing, and on Weddell Island where upland populations are associated with areas of past grazing, erosion and nutrient enrichment. This highlights the need for further research into the habitat requirements of this species and Middle Island is potentially an ideal location to investigate this further.

Of particular concern was a white rust disease (putatively *Albugo* sp.) present on some plants, apparently reducing or completely preventing seed set by some individuals. This has also been observed at other populations. It is unclear if this is a native pathogen, part of the natural ecology of rock-cress or has been introduced, perhaps on brassica crops such as swede and turnip, or related garden plants, which host similar diseases. In the latter case, this disease might present a serious threat to the conservation status of this species. Identifying this disease and assessing its potential impact on this species should be a high priority.

Fuegian Foxtail *Alopecurus magellanicus*

This species is nationally threatened and Middle and Motley Islands host the only two known populations east of Falkland Sound.

Previously recorded as a few individuals by R. Woods in 1997, R. Upson recorded a stand estimated at 10 x 25 m. The stand was revisited during the current survey and measured as a dense, continuous stand 8 x 5 m, with a high proportion of culms flowering. As the species is strongly rhizomatous, it is expected that this is a single individual which has spread vegetatively. It appears that the area occupied by this individual may vary considerably over time, perhaps in relation to climate and soil moisture levels.

Other records

Additional data were recorded on species seen throughout the island. Andrew Stanworth reported the only new record for the island, Yellow-violet *Viola maculata*. Circa 14-18 plants (see below) were found at S 51° 57.238' W 58° 27.627'.



No Dock species *Rumex* spp. were found on the island, though it was not possible to search accurately for them as no data were present in the BRAHMS database regarding their presence on the island. Previous records of this species are thought to have been made for the Island.

Data and specimens collected

All data collected by R. Lewis and B. Bond is recorded in the BRAHMS database. After data cleaning, these records will all be stored as part of the UKOTs Online Herbarium at RBG, Kew, with a copy returned to FC.

One herbarium specimen of rock-cress was collected from an individual infected by the rust fungus, along with 54 DNA samples from different individuals. A herbarium specimen of Fuegian Foxtail was also collected, along with two DNA samples from opposite ends of the patch and a live collection of a few culms with attached rhizomes.

All specimens and DNA samples will be sent to RBG, Kew and one set of mounted duplicates of specimens will be returned to the Falkland Islands National Herbarium. The live collection of Fuegian Foxtail is being grown on at the Native Plant Nursery at Stanley Garden Centre.

Recommendations

- Future visitors to avoid the point of the south end of the eastern sand beach (WP 28) during the breeding season, due to presence of South-American terns.
- Further develop the basic monitoring of Rock-cress in order to better record changes in the habitat mosaic alongside changes in Rock-cress populations.
- Due to dry soil conditions and thinning peat cover, Bluegrass *Poa alopecurus* and early-colonising species may be more appropriate for initial restoration at burnt and eroded sites. Once initial vegetation cover has established by planting, tussac may either naturally regenerate, or can be planted into this vegetation.
- Research more accurate data from previous Records of Curled Dock *Rumex crispus* and thoroughly survey.