ISLAND LANDCARE (FALKLAND ISLANDS)

NATIONAL PURPLE THISTLE CONTROL PROGRAMME 2021 - 2024

POST VISIT CONTROL REPORTS 2022 - 2023 SEASON

Spear thistles amongst tall-fern in Blossom Valley, Saunders Island

FIG ESB Reference: ESB_8_2021, Project Title: “Island LandCare National Purple Thistle Control Programme 2021 – 2023/2024”.

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Report authors: Sally Poncet and Ken Passfield

Contact: Island LandCare, PO Box 538, Stanley, Falkland Islands FIQQ 1ZZ
sallyponcet@horizon.co.fk porvenir@mailasail.com

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SUMMARY

In 2021, FIG contracted Island LandCare (ILC) to carry out three year's of thistle control Island-wide (2021 - 2024). This report is for year two of the programme. The programme (Reference ESB_8_2021) is funded by FIG's Environmental Studies Budget (ESB), and entails two annual control visits to the majority of spear thistle sites and one annual visit to most creeping thistle sites. Sites *not* covered by ESB funding include MOD land at Mare Harbour and MPC (thistles here are controlled by a MOD contractor), Stanley Common (weed control carried out by Island LandCare under contract to FIG's Environmental Department), Stanley town (FIG PWD), and a couple of sites on privately owned land on East Falkland which are being controlled by the landowner. Landowner contributions to the programme include the cost of 2 person days from Falkland Landholdings for Fitzroy thistles, and accommodation, food and transport from Saunders Island Farm for Saunders thistle control.

Spear thistles *Cirsium vulgare* are found on six offshore islands (Saunders, Keppel, Golding, Pebble Islet, Pebble, Northeast Islands) and at MPC and Mare Harbour (but none in Stanley). Creeping thistles *Cirsium arvense* are currently restricted to several sites on mainland East Falkland including Stanley and MPC, Lively Island and Philimore Island (see map below). A full history of control work carried out on these two species up until 2021 is described in the report *Overview of the Island LandCare Spear Thistle Control Programme 2018-2021'* (Poncet and Passfield 2021). This report also contains distribution maps for each species at each control site.

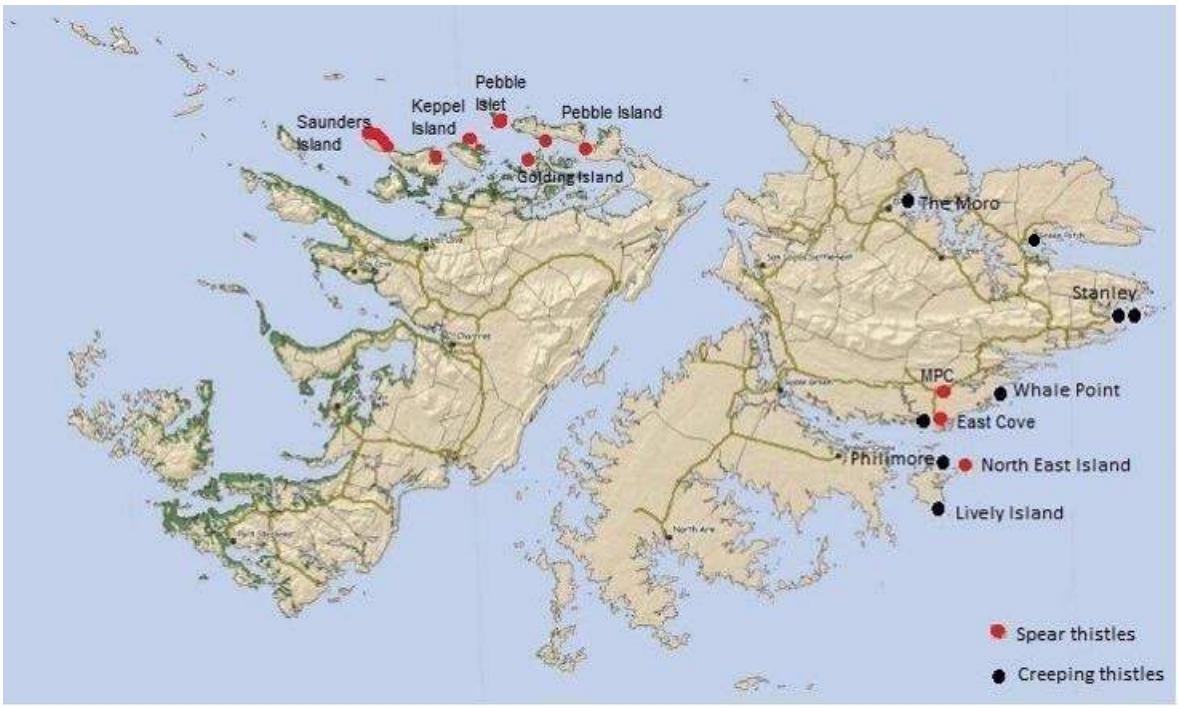

Fig . 1 Spear thistle and creeping thistle locations.

Spear thistles on Saunders are now much reduced after more than ten years of sustained annual control. The largest area of spear thistle infestation is now on Keppel Island, where thistles have had over a decade of uninterrupted growth and seeding, This has resulted in a high seed load in the soil, so it will take several more years of control before the seedbank is exhausted and coverage begins to drop significantly. It is worth noting that the bi-annual control carried out on Keppel by ILC since 2017, has prevented the spread of a veritable 'forest' of continuous chest-high spear thistles along the island's north coast, with billions of seeds released every year and dispersing downwind to Pebble Islet, Pebble, Golding, Shallow Bay, Main Point and beyond. Small infestations have already been found at the first three sites.

The lack of systematic control of thistles on MOD land at East Cove in Mare Harbour and MPC up until this year has noticeably compromised the thistle control efforts on adjacent Fitzroy Farm land. With a constant top up of seed from 'next door', progress in reducing the level of infestation has been a lot slower than at any other site, and thistles have spread from Mare Harbour to Lively, Philimore and North East Islands. Fortunately, this year there was a significant improvement in the MOD control effort. If this continues into the future, it will help reduce the area of thistle infestation on Fitzroy farm land.

Creeping thistles are much easier to control as plants spread mostly vegetatively, although they may also be dispersed by wind. This can be seen in Stanley where creeping thistles are spreading downwind from the western end of the harbour towards the centre of town. Other infestations are at Mary Hill Quarry and the Yorke Bay Pond spoil heap.

The table below summarises weed control progress, measured in square metres of thistles sprayed at each site.

Site	Thistle species	Year ILC control initiated	Original spring cover sq m	2021 spring sq m	2022 spring sq m
Saunders Island	Spear	2015	617	70	129
Keppel Island	Spear	2017	2050	1340	1162
Pebble Islet	Spear	2019	70	80	50
Pebble Island	Spear	2020	50	30	2
Fitzroy Farm	Spear	2018	338	233	295
North East Island	Spear	2020	175	135	216
Golding Island	Spear	2022	1	-	1
Totals	**Spear**	**-**	**3301**	**1888**	**1855**
Fitzroy Farm	Creeping	2018	400	20	35
Philimore Island	Creeping	2021	1500	500	150
Lively Island	Creeping	2021	160	160	1
The Moro (Lorenzo Farm)	Creeping	2021	125	125	2
Totals	**Creeping**	**-**	**2185**	**805**	**188**

Table 1. A summary of weed control progress, measured in square metres of thistles sprayed at each site on the first control visit each year.

METHODOLOGY

Targeted application of selective herbicides is the preferred method of dealing with thistles at all stages of growth. Herbicides used are either Meturon (active ingredient metsulfuronmethyl @ 600g/kg) or Grazon (active ingredient triclopyr 600g/litre). Both these herbicides have been designed for use on pasture weeds. Given the very small quantities of herbicides used in targeted spot-spraying it would be impossible for livestock or geese to ingest enough poison to cause any harm. Spraying is only carried out in suitable weather conditions, ie less than 20 knots of wind and dry conditions. Manual control is occasionally carried out on spear thistles, a sharp chisel hoe or knife being used to cut the tap root about one inch below ground level. Manual control is not used for creeping thistles because this encourages the plant to spread by breaking the the root mass into smaller pieces.

Operators' search tracks and hours worked and travelled, plant GPS co-ordinates and spray information (type of treatment, herbicide, infested area and quantity of spray used) are archived with Island LandCare and backed up with our data manager, Kelvin Floyd, of Indigena Biosecurity International Ltd New Zealand. All data are recorded in the field on a mobile phone app and synced to the Falkland Islands Weed Database at the end of each fieldwork session. The app and database were developed by Kelvin who we work with on the South Georgia weed control programme and who provides expert technical advice as and when required.

Acres of head-high spear thistles at the end of flowering (June) on Keppel Island in 2017 prior to starting any control

BIOSECURITY

Particular attention is paid to biosecurity and cleaning all gear between sites to avoid spreading any seeds around. Boots and gear are dipped in Virkon disinfectant when travelling between islands.

SAUNDERS ISLAND

Weed species: Spear thistle *Cirsium vulgare*
Weed locations: Elephant Point and the Sugarloaf
ILC control initiated: 2015
Number of annual visits: 2
Overall search area: 300 ha
Landowner/contact: David and Suzan Pole-Evans, Saunders Island Farm
Co-funding: Saunders Island Farm for accommodation, use of quad bike and motorbike, food and general support. Bad weather contingency days and travel days provided by Island LandCare.
Accommodation+Access: Either at Saunders settlement or the cabin at the Neck, access by FIGAS or yacht *Porvenir II*

Saunders Island	**Spear Thistles *Cirsium vulgare* – main control visit December**
Date(s) of visit	19 and 20 December 2022
Area searched	300 ha
Operator(s)	K Passfield, S Poncet
Weed cover	129 sq m
Area controlled	129 sq m
Hours of work + travel	32 + 6 (not including travel to/from Saunders Island)
No. of days invoiced	4
Control method	Foliar application of herbicide using knapsack sprayers
Herbicide mix	Mix 1: Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre Mix 2: Grazon 90 @ 6ml/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	Mix 1: 25.5 litres, Mix 2: 8.7 litres
Comments	Thistle cover continued to decrease at all the Elephant Point sites, with the lowest number of plants (300 plus 60 seedlings) ever recorded for a first pass along the east coast. For the first time, no plants were found on the islands in Big Pond. Grazon 90 was used in the Elephant Point area to avoid killing grass and creating bare ground for subsequent colonisation by thistle seedlings. This was less of a concern at the Sugarloaf sites so Meturon was used there. Thistle cover at 3 of the Sugarloaf sites continues to decline, however a new hotspot was found by Carol Pole-Evans in a sheltered valley (Blossom Valley) to the east of the 'Sugarloaf North-East' superspreader site, where a single plant releasing thistledown was found in January 2018. The valley had over 300 plants, many large and mature, although none had purple flowerheads. There was no sign of any dead plants that had set seed last summer, and as we had visited this valley twice last year, it seems unlikely that we would have missed a large plant that would have created so much seed. It is possible that thistledown blew in from the 2018 plant and lain dormant in the soil until this year when conditions were ideal for a mass germination. A new site (ST-28) was created at a site where thistles were found last year by Biffo Tuson. It is near an old fence at the junction of two green valleys south of the Sugarloaf South site. Only 28 small plants were found, with none having set seed last year. The graphs below show the decrease over time of the amount of herbicide used and square metres of coverage, as well as the total number of plants for spring visits since ILC started control in 2015. There is still a decline in overall numbers of plants sprayed, but the 300 plants in Blossom Valley caused an increase in the amount of herbicide used and square metres of coverage as they were mostly larger plants between knee and waist high.
Followup work	Next visit recommended March 2023

Saunders Island	**Spear Thistles *Cirsium vulgare* - followup control visit March**
Date (s) of visit	1 - 4 March 2023
Area searched	300 ha
Operator(s)	K Passfield
Weed cover	35 sq m
Area controlled	35 sq m
Hours of work + travel	22 + 8 (not including travel to/from Saunders Island)
No. of days invoiced	4
Control method	Hand pulling of mature plants and cutting roots of growing plants
Herbicide mix	n/a
Litres of mix applied	n/a
Comments	**Elephant Point:** With the summer having been so dry, there was very little grass growth so plants were visible from a long way off. Most of those found were 20 - 40cm high with a tall spindly appearance and a single purple flowerhead. Perhaps 5% of the 150 plants found had set a small amount of thistledown. A new spear thistle site was found by Louise Pole-Evans while gathering the north side of Mount Richard. 80 - 100 thistles were found in two narrow green valleys adjacent to each other. Louise cut them down in one valley and returned a few days later to cut down those in the second valley. When we returned a week or so later, most of the dead plants had wilted and were releasing thistledown. We piled the cut plants up in a hollow between two fern bogs to prevent further wind-borne spread and manually cut a further 150 seedlings and rosettes. It is likely that thistles have been at this location for several years. There is very little suitable habitat in the wider area which is mostly diddle-dee and clay, so further spread from this location is unlikely, and control within the two valleys is straightforward. **Sugarloaf:** Numbers of thistles at the 3 original sites continued to decline. No plants releasing thistledown were found.
Followup work	Next visit recommended November/December 2023

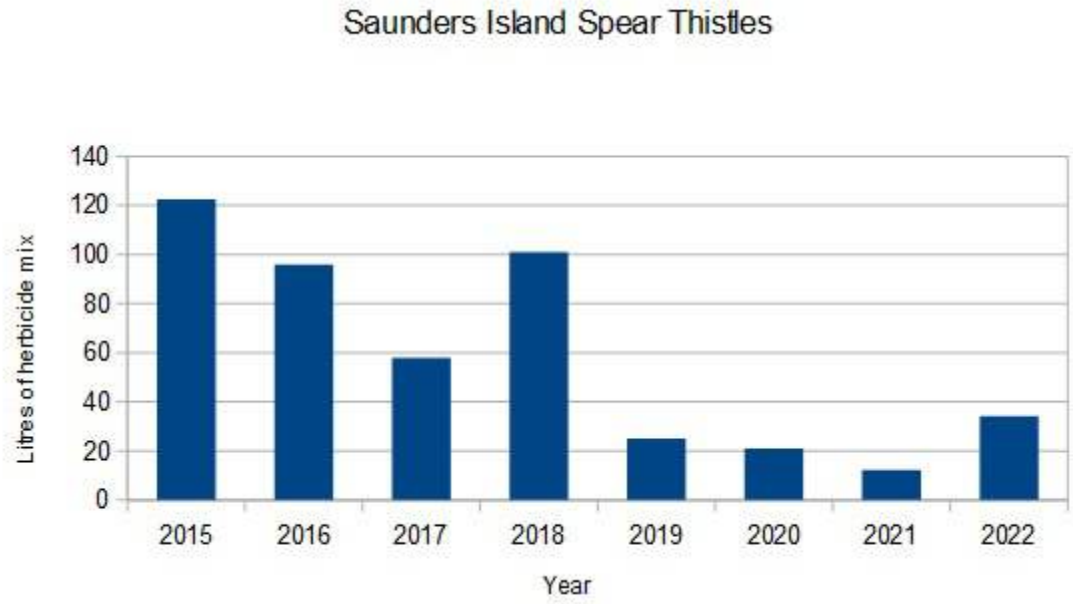

Fig. 2 Changes in the quantity of herbicide used between 2015 and 2022 (spring visits).

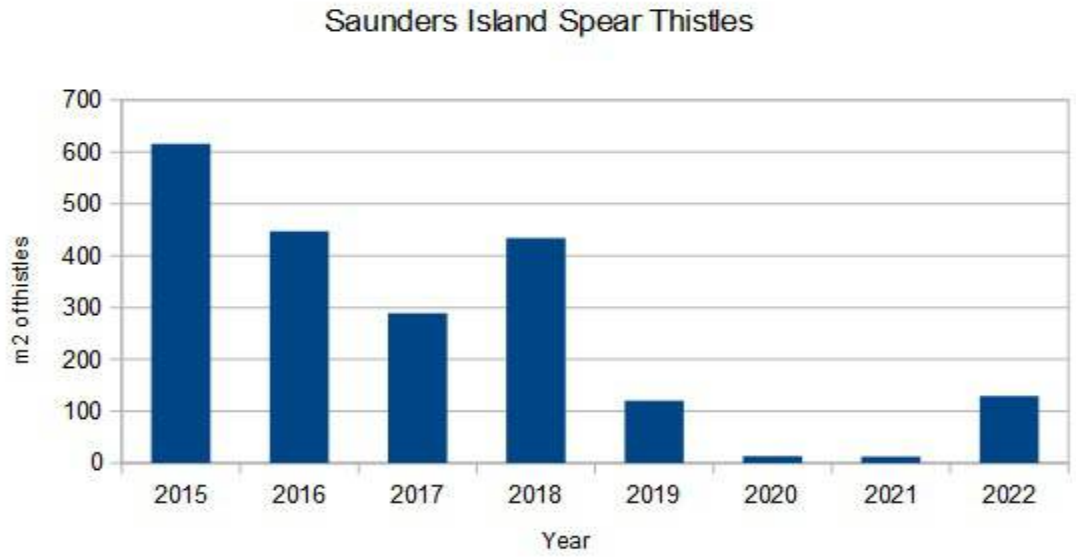

Fig. 3 Changes in the surface area (square metres) of spear thistles controlled 2015 and 2022 (spring visits)

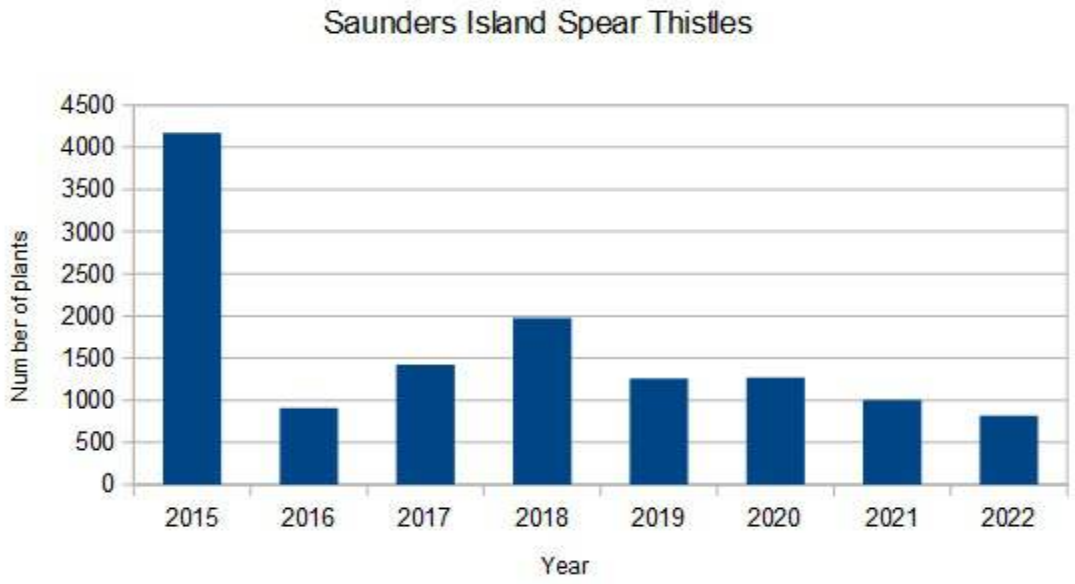

Fig. 4 Total number of plants controlled 2015 - 2022 (spring visits)

Sprayed spear thistles (indicated by the red dye) in early summer (December) before the plants have set seed.

KEPPEL ISLAND

Weed species:	Spear thistle *Cirsium vulgare* and Calafate *Berberis microphylla*
Weed locations:	Spear thistles mostly between Robinson Point and North Point, plus some east coast outliers. Calafate core area around the settlement paddocks, plus a few outliers
ILC control initiated:	2017
Number of annual visits:	2
Overall search area:	400 ha
Landowner/contact:	Estate Mr L Fell
Co-funding:	Use of motorbike, bad weather contingency days and travel days: Island LandCare Grazon herbicide: Government of South Georgia and South Sandwich Islands
Accommodation+Access:	Yacht *Porvenir II*

Keppel Island	**Spear Thistles *Cirsium vulgare* - main control visit**
Date (s) of visit	8 October and 7 to 14 December 2022
Operator(s)	K Passfield, S Poncet
Area searched	400 ha
Weed cover	1162 sq m
Area controlled	1162 sq m
Hours of work + travel	72 + 16 (not including travel to/from Keppel Island)
No. of days invoiced	11
Control method	Foliar application of herbicide using knapsack sprayers
Herbicide mix	Grazon @ 6ml/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	233 litres
Comments	A single day visit was made on 8 October, in order to assess the state of thistle growth and to spray the core area only. Very few plants were found, these were mostly seedlings with only one individual above knee height. Only 15 litres of spray was used on this visit compared to 84 the year before and 106 the year before that. All areas where plants have been found in the past were searched during the December visit. Contrary to our normal practice, this time we started spraying the outliers and left the core areas until last. Thistle cover in the core area has reduced greatly since we started and this is now a straightforward and simple part of the job. It is worth putting more effort into searching all the outlying sandgrass covered dunes. Very few plants were found that were missed last year and had gone on to set seed, perhaps only 20 or 30 in total, reflecting the thorough follow-up work carried out in April 2022. Grazon was used throughout in order to avoid killing grass and creating bare areas for thistle colonisation. In hindsight, this was probably only important on the core area, and meturon could have been used throughout all other areas. Given the fact the plants had been spreading exponentially and setting seed for at least a decade prior to the start of sustained control in 2017, there is undoubtedly a high seed bank in the ground and it will take several more years to see the dramatic reduction in coverage achieved on neighbouring Saunders Island, although Fig 4 and 5 do show a sustained reduction in the amount of thistles present.
Followup work	Next visit recommended March 2023

Spear thistles on Keppel Island, prior to starting any control.

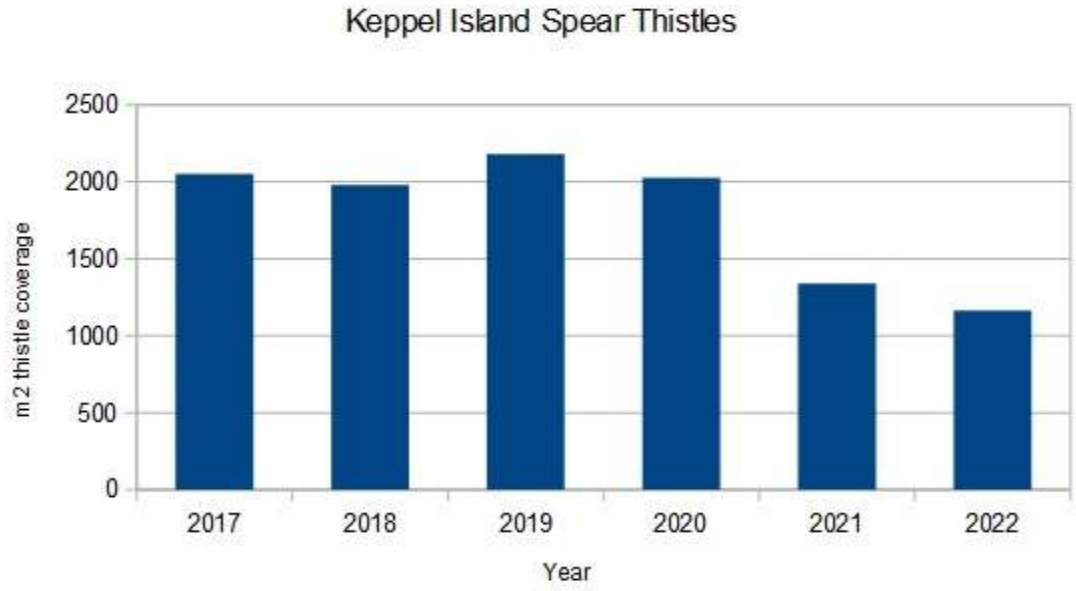

Fig 5: Changes in surface area of spear thistles on Keppel Island on spring visits between 2017 and 2022.

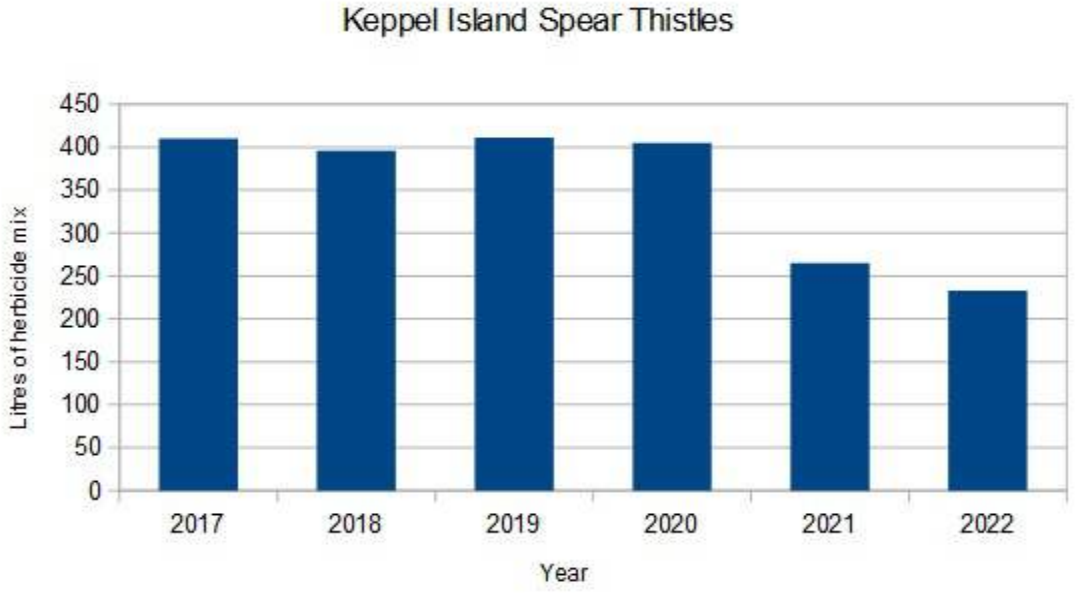

Fig 6. Changes in the surface area (square metres) of spear thistles on Keppel Island on spring visits between 2017 and 2022

Keppel Island	**Spear Thistles *Cirsium vulgare* - followup control visit**
Date (s) of visit	18 - 24 March 2023
Operator(s)	K Passfield
Area searched	400 ha
Weed cover	1302 sq m
Area controlled	1302 sq m
Hours of work + travel	56 + 28 (not including travel to/from Keppel Island)
No. of days invoiced	7
Control method	Foliar application of herbicide using knapsack sprayers plus some hand pulling
Herbicide mix	Mix 1: Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, blue dye @ 8ml/litre Mix 2: Grazon @ 6ml/litre, organosilicone @ 1ml/litre, blue dye @ 8ml/litre
Litres of mix applied	Mix 1: 134 litres, Mix 2: 112.5 litres
Comments	Spear thistles had enjoyed the hot summer conditions with vigorous growth seen in areas where we had blanket sprayed in early December, showing that they are able to germinate and grow to knee-high within three months. It may be worth adding a pre-emergent herbicide to the mix, especially on the open grassy flats. Grazon was used in these areas to avoid killing grass and creating bare ground. Meturon was used in the sandgrass areas. It is a slow acting herbicide, and tends to leave a tall shrivelled up plant which makes an excellent marker for the following year's searching as it shows there were once thistles in the general location. Plants were found at all stages from seedlings to extra large 'super spreaders' shedding thistledown. Only four of the latter were found, a huge reduction from the thousands that were shedding thistledown when we started control in 2017. There were numerous plants with a single purple flowerhead, starting to develop thistledown. All these plants were handpulled and stamped into a suitable hollow in the ground.
Followup work	Next visit recommended October 2023 for initial assessment and control followed by ,main control visit ideally late December 2023.

The Purple Thistle Control Programme 2021 - 2024 also includes four days per annum for calafate spraying on Keppel Island. As we are on the island spraying thistles anyway, it makes sense to continue calafate follow up and maintain the momentum on eradicating this noxious weed from Keppel Island. Prior to control, this was the second largest infestation in the Falklands after the Port Sussex area. More information on calafate control on Keppel, and distribution maps, can be found in the report *Island LandCare's Remote Sites Weed Control Program 2020-2021* (K. Passfield and S Poncet (2021).

Keppel Island	**Calafate *Berberis microphylla* - main control visit**
Date (s) of visit	10 October and 14 - 15 December 2022
Operator(s)	K Passfield, S Poncet
Area searched	200 ha
Weed cover	199 sq m
Area controlled	199 sq m
Hours of work	32 (not including travel to/from Keppel Island)
No. of days invoiced	4
Control method	Foliar application of herbicide using knapsack sprayers
Herbicide mix	Eliminate® (triclopyr & picloram) @ 6 ml/litre, Eradicate® (metsulfuron) @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	76.5 litres
Comments	Followup was carried out in all areas. There was the usual mix of small seedlings growing out of the cover of previously sprayed dead plants and seedlings growing on their own. We found one new outlier higher up the hill above the settlement in an area not searched previously.
Followup work	Next visit recommended October 2023, with particular attention to be paid to the outer boundary of the infested area.

PEBBLE ISLET

Weed species: Spear thistle *Cirsium vulgare*
Weed locations: One patch on S coast, one on N coast
ILC control initiated: 2018
Number of annual visits: 2
Overall search area: 2 ha
Landowner/contact: Falklands Conservation
Co-funding: Bad weather contingency days and travel days provided by Island LandCare
Accommodation+Access: Yacht *Porvenir II*

Pebble Islet	**Spear Thistles *Cirsium vulgare* - main control visit**
Date of visit	16 December 2022
Operator(s)	K Passfield, S Poncet
Area searched	2 ha
Weed cover	50 sq m
Area controlled	50 sq m
Hours of work + travel	4 + 4
No. of days invoiced	1
Control method	Foliar application of herbicide using knapsack sprayers
Herbicide mix	Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	17 litres
Comments	There was a bumper crop of small rosettes at both sites, however no plants were found that had been missed last year and had gone on to set seed so it is likely that these plants come from seeds that have lain dormant in the soil for a few years.
Followup work	Next visit recommended March 2023

Pebble Islet	**Spear Thistles *Cirsium vulgare* - followup visit**
Date of visit	16 March 2023
Operator(s)	K Passfield
Area searched	2 ha
Weed cover	4 sq m
Area controlled	4 sq m
Hours of work + travel	4 + 4
No. of days invoiced	1
Control method	Hand pulling of mature plants and cutting roots of growing plants
Herbicide mix	n/a
Litres of mix applied	n/a
Comments	About 20 spindly plants were found with a single purple flower and a little developing thistledown; however none of these appeared to be shedding any quantity of thistledown. There were several rosettes and seedlings, all of which appeared to be growing vigorously in spite of the dry summer.
Followup work	Next visit recommended December 2021

PEBBLE ISLAND

Weed species: Spear thistle *Cirsium vulgare*
Weed locations: Rabbit Point and Pebble Settlement
ILC control initiated: 2020
Number of annual visits: 2
Overall search area: 2 ha
Landowner/contact: Alex and Dot Gould, Pebble Island Farm
Co-funding: Bad weather contingency days and travel days provided by Island LandCare.
Accommodation+Access: Yacht *Porvenir II*

Pebble Island	**Spear Thistles *Cirsium vulgare* - main control visit**
Date of visit	17 and 18 December 2022
Operator(s)	K Passfield, S Poncet
Area searched	2 ha
Weed cover	2 sq m
Area controlled	2 sq m
Hours of work + travel	4 + 4
No. of days invoiced	1
Control method	Foliar application of herbicide using knapsack sprayers plus manual removal
Herbicide mix	Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	1 litre
Comments	Four small ankle high plants plus approx 60 seedlings were sprayed at the Rabbit Point site. A few plants were seen at the settlement the next day when making a social visit and these were hand pulled.
Followup work	Next visit recommended March 2022

Pebble Island	**Spear Thistles C*irsium vulgare* - followup control visit**
Date of visit	1
Operator(s)	K Passfield
Area searched	2 ha
Weed cover	2 sq m
Area controlled	2 sq m
Hours of work + travel	2 + 4
No. of days invoiced	1
Control method	manual removal
Herbicide mix	n/a
Litres of mix applied	n/a
Comments	Settlement: Approx 60 plants in and around gardens, mostly healthy rosettes. Rabbit Point: One rosette and 10 seedlings No plants with thistledown found at either location
Followup work	Next visit recommended December 2023

GOLDING ISLAND

Weed species: Spear thistle *Cirsium vulgare*
Weed locations: Pedro's Point
ILC control initiated: 2022
Number of annual visits: 2
Overall search area: 1 ha
Landowner/contact: Sammy Hirtle, Stanley
Co-funding: Bad weather contingency days and travel days provided by Island LandCare.
Accommodation+Access: Yacht *Porvenir II*

Golding Island	**Spear Thistles *Cirsium vulgare* - main control visit**
Date of visit	8 December 2022
Operator(s)	K Passfield, S Poncet
Area searched	1 ha
Weed cover	1 sq m
Area controlled	1 sq m
Hours of work + travel	2 + 4
No. of days invoiced	1
Control method	Manual control by cutting tap root
Herbicide mix	n/a
Litres of mix applied	n/a
Comments	This site was reported in autumn 2022 by Susan Hirtle who found several thistles growing in a patch of small rush and dug them up. On our visit we found a single developing plant 30cm tall plus half a dozen seedlings.
Followup work	Next visit recommended December 2023 - given the small number of plants at the site and the open nature of the ground nearby it is unlikely that any will be missed and go on to set seed so a single annual visit is probably sufficient. However if there's any opportunity to be passing by this site, then it should be monitored and any plants controlled.

A recent coloniser on Golding Island, from spear thistle seed thought to have blown in from Keppel Island.

FITZROY FARM

Weed species:	Spear thistle *Cirsium vulgare* and creeping thistle *Cirsium arvense*
Weed locations:	Spear thistles: March Ridge old dump site, Bertha's Beach Gate, Bertha's Valley, Port Ops Creeping thistles: Port Ops and Whale Point
ILC control initiated:	2018
Number of annual visits:	2
Overall search area:	10 ha
Landowner/contact:	Gilberto Castro, Fitzroy Farm Manager, Falklands Landholdings Corporation
Co-funding:	One day funded by FLH
Accommodation+Access:	Day visit by road from Stanley

Fitzroy Farm	**Spear Thistles *Cirsium vulgare* - main control visit January to East Cove and March Ridge**
Date (s) of visit	11 and 12 January 2023
Operator(s)	S Poncet
Area searched	10 ha
Weed cover	295 sq m
Area controlled	295 sq m
Hours of work + travel	11 + 5
No. of days invoiced ESB	2
Control method	Foliar application of herbicide using knapsack sprayers and chisel hoe
Herbicide mix	Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	59 litres
Comments	Despite on-going control, the normal expected decline in numbers of thistles, litres of spray mix and square metres of plant coverage at all these sites has not yet happened, probably due to the constant annual supply of thistledown seeds from the adjacent MOD land. A few thistles are now colonising the open ground on rotavated tracks, where none have been seen before. Similarly, the closely grazed and open ground between whitegrass bogs in Bertha's Beach Valley has also favoured thistle seed germination.
Followup work	Next visit recommended March/April 2023

Fitzroy Farm	**Spear Thistles *Cirsium vulgare* - followup visit in late February to East Cove and March Ridge**
Date (s) of visit	26/02/2023
Operator(s)	S Poncet
Area searched	2 ha
Weed cover	35 sq m
Area controlled	35 sq m
Hours of work + travel	14 + 4
No. of days invoiced	1
Control method	Foliar application of herbicide using knapsack sprayers
Herbicide mix	Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	7 litres
Comments	The visit was ideally timed - the few plants that were missed in January had not yet set seed but were now tall enough to be visible above surrounding vegetation. Most had a single developing purple flowerhead. About 100 were hand pulled at Bertha's Beach Valley. MOD had sprayed thistles this year at all sites on adjacent MOD land, so if this is maintained in future, there should be a noticeable decline
Followup work	Next visit recommended December 2023

Fitzroy Farm	**Creeping Thistles *Cirsium arvense* - main control visit to East Cove (Port Ops)**
Date (s) of visit	12 January 2023
Operator(s)	S Poncet
Area searched	1 ha
Weed cover	35 sq m
Area controlled	35 sq m
Hours of work + travel	done concurrently with spear thistle visit above
No. of days invoiced	done concurrently with spear thistle visit above
Control method	Foliar application of herbicide using knapsack sprayers
Herbicide mix	Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	7 litres
Comments	Creeping thistles at the Port Ops site were about the same as last year, but very few found in the whitegrass on the slopes above.
Followup work	Next visit recommended

Fitzroy Farm	**Creeping thistles *Cirsium arvense* - *at* Whale Point**
Date (s) of visit	n/a
Area searched	n/a
Weed cover	n/a
Area controlled	n/a
Hours of work + travel	n/a
No. of days invoiced	n/a
Control method	n/a
Herbicide mix	n/a
Litres of mix applied	n/a
Comments	A single patch of 200 sq m at Whale Point was first sprayed in December 2019. Only 0.3 sq m remained on the February 2021 followup visit. A followup visit every 3 years will be sufficient to monitor this site.
Followup work	Next visit recommended December 2023

Spear thistle at the Bertha's Beach gate, Fitzroy Farm.

NORTH EAST ISLAND

Weed species: Spear thistle *Cirsium vulgare*
Weed locations: North East Island northern part
ILC control initiated: 2020
Number of annual visits: 2
Overall search area: 10 ha
Landowner/contact: Ian Bury, Stanley
Co-funding: Bad weather contingency days and travel days provided by Island LandCare.
Accommodation+access: On yacht *Porvenir II*

North East Island	**Spear Thistles *Cirsium vulgare* - main control visit**
Date of visit	12 and 13 January 2023
Operator(s)	K Passfield
Area searched	10 ha
Weed cover	216 sq m
Area controlled	216 sq m
Hours of work + travel	9 + 8
No. of days invoiced	2
Control method	Foliar application of herbicide using knapsack sprayers
Herbicide mix	Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre Salt water used for all mixes
Litres of mix applied	264 litres
Comments	Many large vigorous bushes were found, some had two or three purple developing flowerheads which were removed with a knife before spraying the plants. The visit was carried out at the perfect time as the large size of the plants meant they were easy to find in the surrounding bluegrass. Salt water was used as it has proved effective with meturon when used on gorse and creeping thistles.
Followup work	Next visit recommended March/April 2023

North East Island	**Spear Thistles *Cirsium vulgare* - followup control visit**
Date of visit	planned for June 2023
Operator(s)	n/a
Area searched	n/a
Weed cover	n/a
Area controlled	n/a
Hours of work + travel	n/a
No. of days invoiced	n/a
Control method	manual
Herbicide mix	n/a
Litres of mix applied	n/a
Comments	It is intended to visit in June 2023, on looking at the state of thistles in the neighbouring Mare Harbour thistle sites, which were sprayed at the same time in mid January it was felt that carrying out the work later would not make any appreciable difference.
Followup work	Next visit recommended December 2023

PHILIMORE ISLAND

Weed species: Creeping thistle *Cirsium arvense*
Weed locations: Single site on Philimore Island, see map below
ILC control initiated: 2021 (January)
Number of annual visits: 1
Overall search area: 1 ha
Landowner/contact: Sally Poncet, Stanley
Co-funding: none
Accommodation+Access: Yacht *Porvenir II*

Philimore Island	**Creeping Thistles *Cirsium arvense* - main control visit**
Date (s) of visit	12 January 2023
Operator(s)	K Passfield
Area searched	1 ha
Weed cover	150 sq m
Area controlled	150 sq m
Hours of work + travel	2 + 2
No. of days invoiced	0.5
Control method	Foliar application of herbicide using knapsack sprayer
Herbicide mix	Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	30 litres
Comments	Salt water was used last year in part of the patch - there was a lot less regrowth in the area that was sprayed with salt water which received a heavier spray than the area sprayed with fresh so obviously a high water rate and therefore increased amount of herbicide is important regardless whether fresh or salt. Overall progress was very good. Some plants were developing purple flowerheads. Only salt water used throughout.
Followup work	Next visit recommended summer 2023/24

Controlling creeping thistles on Philimore Island, December 2021

LIVELY ISLAND

Weed species: Creeping thistle *Cirsium arvense*
Weed locations: Single site at south end of Lively's west coast
ILC control initiated: 2021
Number of annual visits: 1
Overall search area: 1 ha
Landowner/contact: Stephen and Chris Poole, Lively Island
Co-funding: Vehicle access from settlement provided by Stephen Poole if required
Accommodation+Access: On yacht *Porvenir II* or by FIGAS

Lively Island	**Creeping Thistle *Cirsium arvense* - initial control visit**
Date (s) of visit	11 January 2023
Operator(s)	K Passfield
Area searched	0.1 ha
Weed cover	1 sq m
Area controlled	1 sq m
Hours of work + travel	1 + 2 (not including time to travel to/from Lively Island)
No. of days invoiced	0.5
Control method	Foliar application of herbicide using knapsack sprayers
Herbicide mix	Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre Salt water used in mix
Litres of mix applied	3 litres
Comments	The single patch was all dead with 30 small plants from seedlings to 30cm tall growing around the edges and 5 small ones in amongst dead plants in the centre. Sprayed all plants and an extra metre perimeter.
Followup work	Next visit recommended summer 2023/24

Controlling creeping thistles on Lively Island, December 2021

LORENZO FARM

Weed species: Creeping thistle *Cirsium arvense*
Weed locations: Single site at the Moro
ILC control initiated: 2021
Number of annual visits: 1
Overall search area: 1 ha
Landowner/contact: Michael and Jeanette Clarke, Douglas Station
Co-funding: none
Accommodation+Access: Day visit only, access by road from Stanley

Lorenzo Farm	**Creeping Thistle *Cirsium arvense* - initial control visit**
Date (s) of visit	12/03/23
Operator(s)	K Passfield
Area searched	1 ha
Weed cover	2 sq m
Area controlled	2 sq m
Hours of work + travel	2 + 6
No. of days invoiced	1
Control method	Foliar application of herbicide using knapsack sprayers
Herbicide mix	Meturon @ 0.5g/litre, organosilicone @ 1ml/litre, red dye @ 8ml/litre
Litres of mix applied	1.5 litres
Comments	Very few plants were found, two had developing purple flowerheads, these were handpicked.
Followup work	Next visit recommended summer 2023/24

Creeping thistles at the old gardens at the Moro, Lorenzo Farm, December 2021, prior to starting control.