

EXECUTIVE COUNCIL

CONFIDENTIAL

Title of Report: Former minefield management

Paper No: 193/13

Date: 21st August 2013

Report of: Head of Policy/Environmental Planning Officer/Director of Public Works

1.0 Purpose

To inform Members of a survey undertaken by Falklands Conservation on recovery trials of cleared minefields at Surf Bay and Sapper Hill and to propose management recommendations for cleared minefields.

2.0 Recommendations

That members:

- (a) Support the removal of fencing from around the former minefields as it becomes obsolete;
- (b) That appropriate signage should be erected reflecting the context and location of former minefields;
- (c) That bi-annual photograph monitoring of minefields be undertaken from existing budgets within the Environmental Planning Department.

3.0 Additional Budgetary Implications

None

4.0 Background

- 4.1 A third phase of demining work was undertaken by BACTEC in early 2013. The three phases to date have re-opened considerable parcels of land in the Stanley area, notably large areas south of Sapper Hill as well as smaller areas at Surf Bay, an area south of Mt William and on the west slope of Sapper Hill. Minefields at Goose Green and Fox Bay were also cleared in 2009/10.
- 4.2 Clearing minefields involves the removal of vegetation, peat and soil by hand down to 20cm below 1982 levels. Larger areas have been confirmed as safe using a remotely operated flail. Battle Area Clearance of areas between

minefields and suspect areas which were fenced in 1982 is undertaken by metal detector and visual checks.

- 4.3 During the demining exercise at Surf Bay and Sappers Hill in 2009/10 Executive Council agreed (paper 121/10) that fences should be retained at these sites to prevent vehicular and horse access while active restoration of vegetation in these former minefields was undertaken and monitored by Falklands Conservation – with FIG funding provision for this restoration work. This work is now complete with all funds being expended. A survey report summary attached at Appendix 1 describes the two sites where remediation was attempted and the state of the areas 3 years on.

5.0 Restoration

- 5.1 The results of the survey indicate that restoration work has had limited success, with native seed trials largely unsuccessful at the two sites. Introduced plant species have colonised the Surf Bay site. Tussac and bluegrass tillers planted at Surf Bay were a success, with considerable growth over the 3 years since the trial began.
- 5.2 The current policy on fencing has been based on limiting access to former minefield restoration areas to better allow recovery of grasses and habitats in these areas.
- 5.3 Having conducted site visits and held discussions with Falklands Conservation the Environmental Planning Officer believes there is no benefit in conducting further restoration trials on any of the minefields or suspect areas cleared in the recent works by BACTEC.
- 5.4 The disturbed areas in former minefields south of Sapper Hill are relatively small and fall within much larger undamaged areas. These areas are a considerable distance from the closest road access and it is unlikely many people will access these areas by vehicle. It is not felt that access by vehicles or horses is a concern to these areas.
- 5.5 The habitats present in the former minefields in the south of the common are composed largely of dry camp with acid white grass vegetation and fern beds on relatively flat ground. The demining techniques utilised leave cut vegetation mixed with soils in situ, and as the ground is flat with relatively small areas being cleared, it is expected that seeding from extant seeds and nearby plants will occur.
- 5.6 Flailing work was undertaken extensively during 2012/13 by BACTEC. The impacts are comparable to agricultural rotovating. Flailing is viewed as sustainable in terms of recovery of vegetation, due to the retention of vegetation in the ground, the lower depth (5 to 10 cm) that is impacted and the thin strips which are subject to this action. Many areas subject to flailing in 2011/12 during the land clearance work are already recovering well. It is therefore not considered necessary to undertaking any restoration planting or seeding after this year's demining work. If issues do arise over poor recovery of plant species this can be addressed at a later date.

- 5.7 While detailed surveys of plant recovery at former minefields are not necessary, it is proposed that fixed-point photography of minefields be undertaken on a bi-annual basis to assess general plant recovery.

6.0 Grazing

- 6.1 The Director of Natural Resources does not have concerns about horses accessing the demined areas. He has consulted with horse owners and they are content with access through the demined areas. There is also no concern from the Department of Agriculture or EPD over the area south of Mile Pond being accessed by horses as the area has been surveyed by Falklands Conservation botanists who have not identified any outstanding plant species or habitats present there.

7.0 Access and fencing

- 7.1 To encourage access to the former minefield areas cleared this year it is proposed that fencing is not retained around them, as previous fencing of this wider area has resulted in gates becoming cut up making access difficult. Public Works Department have used rock fill to improve access to the main gate into the former suspect area closest to Stanley, to aid BACTEC in accessing the area for the recent demining work.
- 7.2 The maintenance of fencing around the former minefields cleared in Phase 1 is an issue. The Sapper Hill and Surf Bay sites both require maintenance if the fences are to remain effective. In the case of Surf Bay some of the fencing has been buried by moving dunes and in other parts the fence strands have broken. The fences usually include at least one strand of barbed wire and the buried or broken ones pose a health risk to both humans and animals. A decision is therefore required to either repair/maintain the fences or remove them. As they no longer enclose minefields it is proposed that they be removed as they begin to fail or become ineffective.

8.0 Signage

- 8.1 The policy from Executive Council for Phase 1 cleared sites (Surf Bay and Sapper Hill) was to mark fences as former minefields and restoration areas.
- 8.2 The issue regarding signage is whether the public should be informed that the individual areas were former minefields subject to restoration. In the absence of fencing, these areas could be marked with signs attached to stakes. However, there will be on-going maintenance and cost issues involved with this, particularly where horses have access to the area and may lean on posts and damage the signs.
- 8.3 It is recommended that Committee agrees to recommend to Executive Council that 2010 signage should be removed at the same time as any failing fence and that no new signs be erected to demarcate the areas that were cleared in 2013.

9.0 Conclusion

- 9.1 If demining activities are to continue in the coming years there will be further impacts on the areas cleared and issues over access and signage. Environmental Planning Dept and Falklands Conservation are content that impacts in coastal areas can be left for natural recovery with no specific treatment required and that areas subject to demining and flailing will recover in a five year period. Upland areas are slower to recover and may require active treatment. Access restrictions and signage are only required where active treatment is undertaken. It is recommended that fencing and signage be removed as they begin to fail to reduce maintenance costs and make areas more accessible to the public.

10.0 Financial Implications

- 10.1 The recommendation has no financial implications.
- 10.2 If a decision is made that fences are to remain then a new budget and funds will have to be identified for the maintenance of fencing surrounding former minefields, including materials and labour. It is anticipated that this would be in the region of £500 per annum. There will also be an initial cost of £2,000 for signage and labour with replacement signage required after 5 years at similar rates.

11.0 Legal Implications

The removal of fencing and signage from former minefields and battlefield areas now confirmed as safe does not present a legal risk and there is no legal requirement that they should continue to be fenced and/or signed.

12.0 Human Resources Implications

There are no human resources implications.

Summary

Between May 2010 and April 2013 a trial was carried out to examine the effectiveness of seeding, tiller planting and brash coverage in re-vegetating, recently-cleared minefield sites.

Two trial locations were selected: Sapper Hill, Minefield number SA-025 (approximate centre at 51° 42.308'S, 57° 54.015'W), and Surf Bay, Minefield number SA-008 (approximate centre at 51° 41.754'S, 57° 46.834'W).

Seed treatments trialled at Sapper Hill were native rush (*Juncus scheuchzerioides*), button-weed (*Leptinella scariosa*) and pigvine (*Gunnera magellanica*). 'Fresh' and 'old' brash treatments were also trialled. The same seed treatments were tested at Surf Bay with an additional treatment of prickly-burr (*Acaena magellanica*) also included. At Surf Bay, a further two trial sites were established to monitor the success of tiller planting of bluegrass (*Poa alopecurus*) and tussac (*Poa flabellata*).

Evidence gathered during the trial suggested that the seeding treatments were unsuccessful at both Sapper Hill and Surf Bay. Whilst some of the seeded species did occur within plots, occurrence was certainly not consistent with treatment type. Furthermore, no treatment species achieved mean 60 % ground cover – the initial trial target.

Re-colonisation at the Sapper Hill site was dominated by native species, and was slow and very variable (a mean vegetative cover of 9.6 ± 11.6 %, vegetation height of 2.0 ± 3.6 cm, and a range of 1.4 % to 67 % cover within quadrats after three years). In contrast, re-colonisation at the Surf Bay site was dominated by introduced species, and was relatively rapid. Percentage ground cover had reached a mean of 78.8 ± 11.1 % in three years and a mean height of 20.2 ± 12.9 cm, which was mostly attributable to the cover of *Rumex acetosella* and *Holcus lanatus* – both introduced.

At both sites significant increases in vegetative cover and vegetation height occurred each year. This appeared to be due to growth during the October to April period only. There was no evidence to suggest that grazing pressure resulted in lower rates of re-colonisation at Sapper Hill. Furthermore, there was no evidence that the nature of the ground surface, or brash coverage influenced overall re-colonisation rates.

Tiller planting of both *Poa flabellata* and *Poa alopecurus* appeared successful in terms of establishment, increasing ground cover and height.

In *Poa flabellata* and *Poa alopecurus* tiller plots, height and percentage ground cover increased significantly over the October to April 'summer' period. Height reduced over the winter (April to October) period (not significantly for *Poa alopecurus*), whilst percentage ground cover (basal area) continued to increase. Over the two years of monitoring *Poa flabellata* and *Poa alopecurus* mean percentage ground cover increased by 1.9 % and 0.7 % respectively.