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MEN403-C1-S0061

23 November 2015

Madelyn Smith
VICTRACK
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Dear Madelyn

RESULTS OF ANNUAL SOUTH MORANG GRASSY EUCALYPT WOODLAND MONITORING

Kellogg Brown & Root Pty Ltd (KBR) has been engaged by VicTrack to complete an annual condition assessment of the site known as the South Morang Grassy Eucalypt Woodland (SMGEW). The annual monitoring of the vegetation condition and response to management is a requirement of the *South Morang Grassy Eucalypt Woodland Management Plan* (SMREP 2014), management action 6.2.

Purpose and objectives

Annual monitoring is required to assess the state of the vegetation community and any threats from weeds, biomass and pest animals (including kangaroos). A site inspection was conducted by two ecologists on 14 October 2015, to assess the above threats and the overall site condition.

The annual monitoring program is also required to identify any changes to the current management practices and to inform management over the subsequent year. Therefore, recommendations within this letter provide adaptive management solutions to the existing planned management detailed within the SMGEW Management Plan (SMREP 2014).

General site condition

The site generally appeared to be in good condition, with a high cover of native grasses, herbs and forbs and a low cover or target weed species including Chilean needle-grass (*Nassella neesiana*). A number of new matted flax-lily (*Dianella amoena*) were noted towards the south-eastern perimeter of the site where overall grass biomass has been reduced and intertussock spacing has become available.

However, the cover of annual grass species was notably high in other areas of the site, particularly towards the middle and southern perimeter (e.g. adjacent to commercial buildings). The most dominant weed species is *Bromus* spp. including soft brome (*Bromus hordeaceus*) and great brome (*Bromus diandrus*). The cover of Chilean needle-grass increased slightly during the period but its overall cover was considered low.

Kangaroo grass (*Themeda triandra*) remains the dominant native grass species. The cover of wallaby grass (*Rytidosperma* spp.) has not recovered from 2013, when a large number of kangaroos were accessing the site and target grazing the species.

The matted flax-lily in Site 4 (translocation site) appear to be in good condition with low cover of weeds and biomass and sufficient intertussock spacing. Kidney weed (*Diachondra repens*), a small native rhizomatous groundcover has increased in cover throughout the site and appears to be outcompeting weeds.

Grassy and herbaceous weeds

The cover of grassy and herbaceous weeds has increased slightly and remains a high priority for management. This is mainly due to the increased cover of soft brome and great brome which have aggregated in patches across the site. The cover of target perennial grasses and herbs, including Chilean needle-grass and cocksfoot (*Dactylis glomerata*) remains comparatively low, however both species increased in cover since the last monitoring period. Chilean needle-grass also appears to have spread across the site into areas that were previously unaffected.

The overall cover of grassy and herbaceous weeds is approximately 15 per cent, comprised predominantly by soft brome and great brome. This cover of weeds is higher than the stretch target that management should aim for, which is less than 1% cover. However it appears that current management practices have been able to reduce weed cover in some patches, creating spatial variation across the site.

Woody weeds

The cover of woody weed species remains low, although there is an apparent increase particularly along the northern boundary. This is comprised of blackberry (*Rubus fruticosus spp. agg.*), hawthorn (*Crataegus monogyna*) and sweet briar (*Rosa rubiginosa*). Ongoing management of woody weeds should continue in order to maintain this low cover.

Biomass

Biomass across the site appears to be lower than previous years. This is likely a combination of recent dry and cool weather during winter (BOM, 2015) that has led to reduced growth and germination across the site plus current management activities to reduce grass fuel loads (i.e. mow-and-catch). Mowing has kept grass levels low, particularly around the site perimeter and weed control has reduced exotic grasses, promoting the growth of native grasses that are lower in stature. In these areas where the grass profile is lower, light is able to penetrate the ground layer and a high diversity of native herbs and forbs have established.

Currently biomass appears to be at a manageable level however any extended rainfall events will lead to a rapid increase in biomass. Therefore, constant and ongoing management is required to control biomass. Biomass removal through the summer fire period is also considered to be beneficial to the ecological function of the site, particularly as it is considered the only practical method of regular disturbance.

Mowing and slashing should occur in early to mid-spring while exotic grasses are in flower and during late summer, after kangaroo grass has dropped its seed. Weed seed should be removed from the site, while native seed can be spread on site where exotic grass management (i.e. removal) has occurred. This management method should extend to as much of the site as is practical within budget.

Pest and Native Animals

Rabbit droppings were noted around the north-eastern corner of the site where the perimeter gate has been knocked down. Rabbit activity should be monitored following fence repairs (see below 'Adjacent Land Use and Fence Condition') and any rabbits remaining within the site should be controlled.

Limited signs of kangaroo presence were observed, as opposed to previous years, when grazing pressure from kangaroos was notably high, and targeted at the wallaby-grass dominated areas. Similarly no impacts from pest animals were noted within Site 4.

Adjacent Land Use and Fence Condition

Threats from adjacent land use has generally been a minor issue, however since the completion of the project, there appears to have been an increased level of vandalism to the perimeter fence. It was noted during the site visit that the east perimeter gate (located in the north-east corner) had been knocked down allowing mountain bike and motorbike riders access to the site. Motorbike tracks were noted in the cutting situated along the northern perimeter of the site. The tracks traversed up to the top of the cutting and into the centre of the site where there is a high diversity of native lilies and forbs. Furthermore, Abzeco noted that people were entering the site on quad-bikes and removing logs and timber (verbal communication with Geordie Scott-Walker, 9/11/2015).

Since there was only limited evidence of rabbits and kangaroos entering the site, it is probable that the fence vandalism occurred recently and it should be repaired as soon as practicable to reduce further damage to the site.

In comparison to previous years, rubbish dumping within the site appears to have reduced. There was a small amount of rubbish noted along the northern boundary, adjacent to the car park. While this is not a high priority for management, annual litter removal should continue to occur following the summer school holidays.

Existing Matted Flax-lily

The ongoing mowing of fuel breaks and regular removal of biomass by mowing and slashing is likely to benefit the matted flax-lily. In areas that had previously been mown, there was a high diversity of native herbs and forbs including matted flax-lily. The proposed management action to remove biomass which is scheduled annually in October should alternate locations from year to year, beyond weed dominated areas, to minimise build-up of biomass in discrete areas around concentrations of matted flax lily.

Conclusions and Recommendation

The original target weeds that were present on the site, galenia (*Galenia pubescens*), twiggy turnip (*Brassica fruticulosa*), rye-grass (*Lolium rigidum*), capeweed (*Arctotheca calendula*) and Paterson's curse (*Echium plantagineum*) are generally under control and do not comprise a high threat. The cover of cocksfoot and Chilean needle-grass has increased slightly from last year and Chilean needle-grass continues to spread into previously unaffected areas. Intertussock spacing has been maintained in patches across the site, allowing for the germination of annual species, including native grasses (particularly kangaroo grass), lilies and orchids.

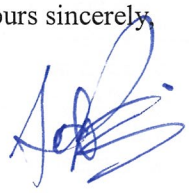
KBR

The focus for future management of this site should be to reduce the cover and biomass of annual and perennial weed species through timed mowing and removal of weed seed. Any native seed that is collected during mowing activities can be reused on site in areas previous treated for weeds (i.e. mown areas).

Current management techniques and planned works are likely to be sufficient to control weeds and other threats. Increasing the size of the proposed fuel breaks during the fire season and alternating areas mown for annual weed removal in early spring and late summer would help maintain the biomass present on site, which is likely to benefit the entire site including the existing matted flax-lily.

If you have any queries regarding the above please contact me at Adam.Rigg@kbr.com or on (03) 9828 5421.

Yours sincerely,



Adam Rigg
Senior Ecologist

References

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South Morang Rail Extension Project (SMREP), 2014. Translocation Plan for Matted Flax-lily, SMREP-REP-PW-ENV-002 Revision 3.