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Madelyn Smith
VICTRACK
Level 8
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Dear Madelyn

RESULTS OF ANNUAL SOUTH MORANG GRASSY EUCALYPT WOODLAND MONITORING

Kellogg Brown & Root Pty Ltd (KBR) has been requested by VicTrack to complete annual condition monitoring 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 management action 4.6 of the *South Morang Grassy Eucalypt Woodland Management Plan* (SMREP 2013).

Purpose and objectives

Annual monitoring is required to assess the state of the community and the threat of weeds, biomass, pest animals and native animals (such as kangaroos). A site inspection was conducted by two ecologists on 22 October 2014, to assess each of the above threats and the overall condition of the site.

The annual monitoring program is also required to identify the need for change to the current management practices and to inform management over the next year. Recommendations within this letter provide adaptive management solutions to existing planned management detailed within the SMGEW Management Plan.

General site condition

The site appears in to be in good condition with low cover of target weed species including Chilean needle-grass (*Nassella nesssiana*). However, the cover of annual grass species was notably higher than previous years. The most dominant annual weeds include soft brome (*Bromus hordeaceus*), large quaking grass (*Briza maxima*) and great brome (*Bromus diandrus*). While the annual grass cover increased over the site there was an apparent reduction in overall grass biomass from native and exotic perennials, allowing inter-tussock spaces to be maintained and encouraging greater diversity of herbs and forbs.

The matted flax lily (*Dianella amoena*) translocation site also appeared to be in good condition with low cover of weeds and biomass.

Grassy and herbaceous weeds

Grassy and herbaceous weeds appeared to reduce in cover although they are still considered a high priority for management. It was noted during the assessment that the portion of annual grass species

cover has increased over the site. Conversely, target perennial grasses and herbs, including Chilean needle-grass and panic veldt-grass (*Ehrharta erecta*) have decreased in cover. This suggests that current management practices have been effective at targeting high priority weeds and consequently annual weed species cover has become more dominant. It is likely that dry and warm (BOM, 2014) climatic conditions have also contributed to lower grass biomass. It is recommended that adaptive management should be implemented to target annual grass species while still maintaining the lower level of perennial grasses and herbs.

The key weeds for management are considered to be annual grasses such as soft brome, large quaking grass and great brome. In order to target annual grasses, it is recommended that a discussion be held with bushland contractors prior to October 2015, to determine if mowing of patches (e.g. mosaic) should be re-established as part of the management practice across the site to remove seed before it reaches maturity and prior to seed drop. Management should also continue to eradicate perennial species including Chilean needle-grass and panic veldt-grass, and high threat herbs, Paterson's curse (*Echium plantagineum*) and capeweed *(Arctotheca calendula)*.

Grassy and herbaceous weeds currently cover approximately 10 per cent vegetative cover, with the majority comprised of soft brome, large quaking grass and great brome. The current coverage of grassy and herbaceous weeds is higher than current targets for management. However it appears that management and recent weather conditions have slightly decreased the cover of grassy and herbaceous weeds from the previous year.

Woody weeds

Woody weeds currently occupy very low coverage, with less than 1 per cent vegetative cover. This is comprised of blackberry (*Rubus fruticosus spp. agg*.), hawthorn (*Crataegus monogyna*) and sweet briar (*Rosa rubiginosa*) present as re-growth from previously treated individuals. Regrowth of woody weeds should continue to be sprayed when observed.

Biomass

Biomass across the site appears to be lower than the previous condition assessment. This is likely through a combination of recent dry and warm weather during winter and early spring (BOM, 2014) that has led to reduced growth and germination across the site plus current management activities has reduced biomass. Mowing has kept grass levels low, particularly around the site perimeter and weed control has reduced exotic grasses and promoting native grasses that are lower in stature compared to exotic grasses.

While biomass currently appears to be at a reasonable level, any extended rainfall events will rapidly increase biomass throughout the site. Therefore, constant and ongoing management is required to control biomass. Biomass removal through the summer fire period is also considered to be beneficial for the ecological function of the site, particularly as it is considered as being the only practical method of regular disturbance. Mowing and slashing during late summer, after kangaroo grass (*Themeda triandra*) seed has dropped, should extend to as much of the site that is practical within budget.

It was observed during the previous monitoring visits that the density of forbs appeared to be recovering after a period of decline. During the current monitoring, with reduced biomass and the ongoing weed management, the density of forbs is considered to be higher than the previous three years.

Pest and Native Animals

No signs of rabbit presence were detected within the site. As opposed to previous years, there were no kangaroos observed during the site visit and there was little evidence of their presence (i.e. limited scat observed). Similarly no pest or native animals are entering into Receptor Site 4 and no impacts to translocated matted flax-lily have been observed.

Last year KBR ecologists and bushland contractors sought advice from DEPI on managing the number of kangaroos using the site, due to the risk associated with the kangaroos traversing McDonalds Road. Consequently the perimeter fence was fixed and secured in April/May 2014, which prevented kangaroos accessing the site and eased grazing pressure on wallaby-grass (*Rytidosperma* spp.) dominated areas.

Adjacent Land Use and Fence Condition

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. This can be heightened during school holiday periods. In previous years, holes were regularly cut into the perimeter fence and repairs have been required several times a year. It was noted during the site visit that the perimeter fence was in good condition.

Litter and general rubbish continues to be thrown into the site from the adjacent land. It is concentrated along the southern boundary and adjacent to the car park. Litter is not extensive or a high priority for management, however 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 species. The proposed biomass removal management action scheduled for 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 and Paterson's curse are generally under control and do not comprise a high threat. After a substantial increase in the cover of Chilean needle-grass observed last year, there was a noticeable decrease in cover noted during the current assessment. Kangaroo grass continues to benefit from site management, although inter-tussock spaces have been maintained due to the overall reduction in biomass, allowing for the germination of annual species, including native lily and orchid species.

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 spring 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:

Bureau of Metrology (BOM), 2014. Victoria in winter: a mild and dry winter, viewed online 12 November 2014, Bureau of Metrology
http://www.bom.gov.au/climate/current/season/vic/summary.shtml