HFNC weed control report for Nigretta Flora Reserve 2018

HFNC requested the Lands Dept to cancel the grazing lease on this Crown Land in 1975. HFNC submissions to the LCC were successful and this 12 ha grassy woodland block with frontage to the Wannon River and Nigretta Falls became a Flora Reserve in 1982. Our flora surveys have shown 205 native species present. An aggressive invader, African Weed Orchid (AWO), was found in great numbers on this 12-ha site in 2009 and action has been taken over the last 10 years to combat it, as well as other weeds (e.g. Phalaris) resulting from a history of grazing and other incursions.

The rainfall at Hamilton for May-Oct. was 86, 57, 89, 86, 29 & 28 mm, a total of 375 mm, cf. the long-term average of 427 mm. The 6-month totals for 2009-2017 were 407, 390, 338, 399, 369, 288, 254, 631 & 360 mm. The winter-spring rainfall for 2018 was fairly average, if a little dry in Sep-Oct.

Sunday 14 Oct. We had 7 volunteers (RB, DL, PH, JS, RT, DD, KK). Our approach was from the northern side through private property, the river level being too high to cross from the Scenic Reserve. We variously worked from 9.45 am to 4.30 pm (total of 28 hrs) and wiped a total of 1,135 AWO with 4 L of glyphosate (30 mL/L), metsulfuron methyl (1 g/L), wetter (5 mL/L) and dye (5 mL/L) solution. Including thistles that were also treated, approximately 3.5 mL of wipe solution was applied per plant.

Galium aperine (Cleavers) were found under Tree Violets near the bend in the fence on the mid N boundary and also in the NW corner and these were either hand-weeded or sprayed (caution – a native *Galium* sp. also occurs in low numbers in this reserve). The lower branches of the 7 main Tree Violets in the NW area were pruned to prevent spray-damage to the shrubs, and fallen branches removed. *Fumaria* that had flourished in the NW corner appears to have been obliterated by previous treatment.

Clumps of *Phalaris* were sprayed at both locations, as well as a patch in native grassland 40 m from the NW corner. Six L of spray (Glyphosate @ 20 mL/L of spray) was used.

Saturday-Sunday 27-28 Oct. We approached the reserve from the Nigretta Scenic Reserve, the river level being low enough to cross. We had 4 volunteers (RB, DL, PH & RZ) and worked variously from 9.30 am to 4 pm (a total of 21 hr) and wiped 1875 AWO. About 200 Wild Gladiolus were also wiped along the river and 50 at the fence towards the SE end. About 70 thistles were also treated. Most of the AWO had heads but none were in flower.

A Hawthorn tree on the slope above the river was cut down and the stump poisoned. Two large and one smaller *Acacia longifolia* (Sallow Wattle) that had invaded the *Banksia marginata* (Silver Banksia) grove at the river on the eastern end were cut and poisoned. The largest tree had several trunks lying on the ground and covered a circle of 15 m diameter, completely suppressing all other vegetation. If uncontrolled this non-indigenous species would dominate the sandy area occupied by the significant stand of banksias.

Wednesday 14 Nov. RB & PH worked from 1.0 pm to 4 pm (6 hrs) on weeds and wiped 215 AWO (1 L herbicide solution). Most of the AWO were flowering but some had heads grazed (by Macropods?).

The lower branches of 6 or more Tree Violet bushes in the mid-N fence area were pruned to allow herbicide treatment of Cleavers without killing the bushes. The weed has begun to spread out from the shrubs, a threat to the integrity of the reserve. Those plants were sprayed and all others beneath the bushes were either hand-weeded or sprayed. A few Wild Gladiolus were also treated at this site.

Phalaris and thistles at the base of a large River Red Gum towards the SW corner was sprayed or wiped with Glyphosate. Phalaris plants in the reserve have now all been treated but require watching.

Sat 24 Nov. RB worked from 9.30 am to 3 .30 pm (5.5 hrs) to cover the western block and dug 255 AWO not previously wiped with herbicide. Rain had fallen in previous days, assisting the digging. The number of 'new' (and many quite large) AWO found was surprising, given that the area had appeared to be 'clean' after wiping on 14 November. However, experience has shown that an operator will invariably not see at least 10% of AWO (large plants as well as small plants and those without flowering stalks) at any spot, even when care is taken to view from all sides. A novice may miss 30% of AWO. In terms of effort, clearly it would be better to conduct more 'wiping' visits earlier, covering the site more thoroughly. Digging up the plants is not an easy task and may not remove all tubers.

The number of AWO removed in 2018 is less than in any previous year, but our effort (60 hrs) has been as extensive as in 2017 (57 hrs) and, we believe, more complete. That is, the number of AWO treated is similar to the numbers actually present. Again, we wonder if the apparent decline in AWO numbers is due to our past efforts or simply the result of climatic variation! After 10 years of work, have we wasted our time in trying to control this particular weed?

Small infestations of Phalaris and garden weeds (*Fumaria* sp., *Galium aperine & Gladiolus* sp.) will be controlled. There is currently no *Sparaxis bulbifera*, Cape Tulip, Bridal Creeper, *Vinca major* or *Ixia* present, but the latter 2 species are on the Scenic Reserve opposite and will need to be watched.

Wild Gladiolus has in recent years spread from a few plants along the river edge, and one suspected old dump of garden rubbish on the SE boundary, to a few plants in various spots in the reserve. It is likely that this weed will become a serious invader as the climate changes.

The early history of grazing has resulted in pasture plants infesting some areas, particularly in the NW sector. The main action proposed there is to prevent Phalaris from establishing and spreading.

Summary of works to control AWOs since 2009:

- 2018 – 3,480 AWO wiped (3,225 plants) & dug (255) [60.5 hr]
- 2017 – 5,190 AWO wiped (3,820 plants), dug (1,265 plants) or pulled (105 plants) [57 hr]
- 2016 – 16,100 AWO wiped (13,625 plants) or dug (2,480 plants) plus 2,665 plants pulled [93 hr]
- 2015 – 4,045 AWO wiped (3,215 plants) or dug (830 plants) over the entire site [46 hr]
- 2014 – 7,975 AWO wiped (6,665 plants) or dug (1,310 plants) over the entire site [65 hr].
- 2013 – 8,275 AWO wiped or dug (8,125 plants) or pulled to remove heads (150 plants) [71 hr].
- 2012 – 6,900 AWO wiped or dug (6,800 plants) or pulled to remove heads (100 plants) [46 hr].
- 2011 – 5,500 AWO wiped (5,000 plants) or pulled to remove heads (500 plants) [39 hr].
- 2010 – 13,720 AWO wiped (10,140 plants) or pulled (3,580 plants); NW & E not done [27 hr].
- 2009 – 22,500 AWO dug (2,290 plants) or pulled (20,280 plants) but NW area not done [68 hr].

Fauna seen during these works were Tiger Snake, Shinglebacks, skinks, Black Wallaby, Eastern Grey Kangaroo, Echidna and many birds, including a Tawny Frogmouth on a nest in a large River Red Gum, Eastern Yellow Robin, Yellow-tailed Black-cockatoos and Sacred Kingfishers.

Lastly, several orchid hybrids between *Thelymitra ixioides* and *T. rubra* were seen