

## HFNC weed control report for Nigretta Flora Reserve 2016

In 1975, HFNC requested the Lands Dept to cancel the grazing lease on this Crown Land. HFNC submissions to the LCC were successful and it became a Flora Reserve in 1982. An aggressive new threat, African Weed Orchid (AWO), was found in great numbers on this 12-ha site in 2009.

Saturday 15 Oct. We had 8 members present (RB, DL, PH, RZ, YI, JC, GC & JS). Our approach was from the northern side through private property. The rainfall at Hamilton for May-Oct. was 103, 68, 136, 73, 158 & 93 mm, a total of 631 mm, cf. the long-term average of 427 mm, or 349 mm for the previous 7 years. The 6-month totals for 2009-2015 were 407, 390, 338, 399, 369, 288 & 254 mm.

Water was still oozing on ground in the far SW corner where Milk Maids and Chocolate lilies abounded. The reserve was quite dry elsewhere, apart from seepage in the central creek above the swimming hole. Lots of orchids were flowering, including Onion Orchids, *Thelymitra rubra*, very large *Thelymitra pauciflora* (and perhaps hybrid with *T. ixiooides*). A host of other species were in flower. The reserve has 205 native species of vascular flora, with Moss Sunray (*Hyalosperma demissum*) being added today, apparently having been overlooked previously.

We worked from 9.45 to 3 pm (total of 33 hrs) and wiped a total of 5,675 AWO with 11 L of Glyphosate (60 mL/L), Metsulfuron methyl (1 g/L), wetter (5 mL/L) and dye (5 mL/L) solution. The area covered was the NE strip and section from the north fence extending nearly to the river and halfway to the west fence (see map, next page).

Saturday 29 Oct. We had 5 members (RB, DL, PH, YI & RT). We did not finish the entire 12-ha reserve since we had to go over the area worked 2 weeks earlier. A strip in the middle, extending N-S toward the river, and a small strip at the far NE edge remain. We worked from 9.30 am to 5.45 pm (total of 33 hrs) and the tally was 7,950 AWO wiped, with 13 L of herbicide used.

Saturday 26 Nov. We had to approach from the north. We had only 3 members (RB, DL & PH) at this working bee. We worked over the northern half of the reserve again and particularly the central N-S strip. We dug AWO plants from these areas because they had flowered some time ago (except for very small plants) and also had few green leaves. Late in the day 270 large AWO were pulled from the western area south from the centre (see map) but many remain in that area. We found many tiny AWO without flower stems in some spots and these had very large tubers plus a shriveled tuber. Seed must have germinated in winter 2015, the plant producing a tuber and then growing from that in winter 2016, producing the new larger tuber. The purple colour in the long leaves is the key to identification. We worked from 9.30 am to 4.30 pm (total of 19 hrs); the tally was 2,040 AWO dug and removed.

Tuesday 13 Dec: PH & RB crossed the river, working from 9.15 am to 1.15 pm to pull or dig AWO in the SW area and a 100 m strip along the south bank to the SE spur. 2,400 AWO were pulled and 440 dug – the seed heads were still green. Many tiny plants seen in Nov. (from 2015 germination?) had apparently subsequently produced a short (2-3 cm) flower head and probably would have fertile seed.

Did all the seed in the soil germinate in 2015 or 2016? If it takes only 2 years for a plant to germinate, grow and flower, 2017 may be a bad year. The trend in 2015 looked so promising but in 2016 there was a 360% increase in numbers removed! (see summary). Clearly, we should remove more AWO with herbicide early in spring and late spring when the task is much easier; do not dig any AWO later but just pull missed AWO in late November-early December. Biological control should be investigated or AWO will dominate all sandy-type reserves in Victoria and South Australia.

Summary of works since 2009:

- 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 & NE not done [27 hr].
- 2009 – 22,500 AWO dug (2,290 plants) or pulled (20,280 plants) but NW area not done [68 hr].

The *Xanthorrhoea minor* (Small Grass-tree) were all flowering in the reserve; in the absence of fire this appears to be a response to a wet winter in 2016 following 2 drier winters in 2014 & 2015. Some plants blooming in Oct-Nov. are seen below. Blue Pincushions were at their best in mid-Dec.



*Xanthorrhoea minor* 26Nov16



*Caladenia carnea* 15Oct16



*Diuris chryseopsis* 26Nov16



*Hyalosperma demissum* 29Oct16



*Thelymitra pauciflora* 29Oct16



*Glycine latrobeana* 15Oct16



2,300 AWO removed, 26Nov16



Juv. AWO & tubers, 26Nov16



Flora Res. Works Map 2016