

SURVIVAL OF TUBESTOCK PLANTED ON MOUNT PAINTER, 2005-2011

Summary and key findings from a paper prepared by
Sarah Hnatiuk , Friends of Mount Painter, February, 2012¹

- Tubestock planted on Mount Painter by the Friends of Mount Painter between 2005 and 2010 inclusive have been monitored annually to establish how well they have survived.
- Around a quarter of the tubestock planted in 2005 survived their first year of life.
- Changes in planting technique and after care in subsequent years resulted in better survival (56 – 80 per cent).
- During the drier years of 2006 to 2008, survival over the first year of life varied between 55 and 60 per cent. With good rains in 2010, 80 per cent of the tubestock survived to one year of age.
- The greatest mortality occurred during the first one or two years of life in all planting years.
- With the better planting and care practices employed from 2006 onwards, more than three-quarters survived from year to year after the first two years.
- Thirty to 34 percent of plants were still alive four to five years after they were planted in 2006 and 2007, and nearly 35 per cent of the 2008 and 2009 plantings were alive at two to three years old.
- Dry conditions had a greater effect on younger plants than on older ones.
- Mortality was higher on sites that were high, exposed and/or steep.
- It had been hoped that it would be possible to compare the survival of different species with a view to learning which species are most suitable for future plantings. However, there was considerable variation in survival levels between years of planting for individual species.
- Findings relating to individual species for which 10 or more individuals were planted in different years:
 - Consistency in survival over the first year:
 - *Acacia buxifolia* (53 – 54 per cent in 2006 and 2010 plantings)
 - *A. rubida* (87 – 89 per cent in 2008 and 2010 plantings)
 - *Cassinia* spp. (57 – 61 per cent in 2007 and 2008 plantings)
 - Variation in survival over the first year
 - *Acacia pravissima* (40 – 88 per cent in 2006 and 2010 plantings)
 - *Daviesia mimosoides* (50 - 85 per cent in 2008 and 2010 plantings)
 - *Dodonaea viscosa* (48 – 85 per cent in 2006, 2008 and 2010 plantings)
 - *Hardenbergia violacea* (53 – 82 per cent in 2006 and 2010 plantings)
 - *Indigofera australis* (46 – 60 per cent in 2006 and 2007 plantings)
 - *Xerochrysum viscosum* (39 – 58 per cent in 2006 and 2007 plantings)
 - All acacias (48 – 79 per cent in 2006 – 2008 and 2010 plantings)
 - All eucalypts (54 – 100 per cent in 2006 – 2008 and 2010 plantings)

¹ The full version of the paper from which this summary is taken is available from the author at sarahhnatiuk@yahoo.com.au.

- Survival beyond one year of age: there are a few species for which there are records over several years after planting. Among those there are:
 - *Acacia buxifolia*, *A. genistifolia*, *A. implexa*, *A. pravissima* and *Dodonaea viscosa* which showed steady survival after early mortality;
 - *Cassinia aculeata*, *Chrysocephalum semipapposum*, *Daviesia mimosoides*, *Hakea sericea*, *Poa labillardieri* and *Xerochrysum viscosum* which continued to decline substantially over all years after planting; and
 - *Cassinia* spp., *Hardenbergia violacea* and *Indigofera australis* maintained steady numbers after initial mortality for certain planting years and showed continuing decline over the years for other planting years.
- Despite flowering and setting seed, there has been no sign of regeneration from planted *Cassinias* and *Xerochrysum viscosum* . This may be due to the dense ground cover of the potential parent plants and/or damage by kangaroos and rabbits.
- Based on the limited information available so far, supplemented by other observations, the following suggestions are made with regard to future planting on Mount Painter:
 - *Acacias* and *Dodonaea viscosa* can be expected to survive well.
 - *Eucalypts* and *Hardenbergia* are less reliable, with *Hardenbergia* in particular requiring careful selection of sites for planting. Putting the latter near rocks is useful.
 - A better return for effort will be achieved by concentrating on longer-lived species. Avoid short-lived annuals and colonising species such as *Cassinia*.
 - *Hakea sericea* and *Indigofera australis* should also be avoided.
- Friends of Mount Painter intend to continue monitoring on the reserve and will be interested to see how far the higher rainfall in 2010 and 2011 continues to affect tubestock survival, and whether the suggestions made above require qualification to reflect conditions of both the earlier dry conditions and present wetter ones.

